

FRIDAY, NOVEMBER 11.

Fast Passenger Locomotive for Pennsylvania Railroad

With this number of the Railroad Gazette are given four full-page engravings showing end views and cross-sections of this engine, of which an elevation and plan were published

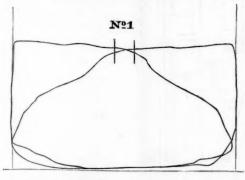
last week, and a perspective view the week before.

The following comparative report of the performance of this engine, with another one (No. 724) of somewhat smaller dimensions will show that the new type, or "Class K" engines as they are designated on the Pennsylvania Railroad,

are working very successfully:
No. 724 is an anthracite coal-burning engine of the Ameri-

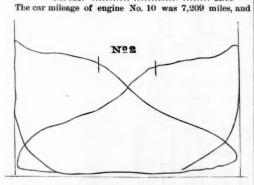
Cylinde	rs	vin.	g-wheels	4 in.	
Grate a	rea	VIII		III.	64
Heating	surface	in	tubes1002.60	ay.	14
60	61	66	fire-box	64	48
**	64	6.6	total1158.15	45	+4
Weight	on main		iving-wheels 28.430	lhs.	
**	" trailin	12		- 66	
4+	" truck.			+6	
				-	

The first engine, or No. 10, has been employed in hauling trains No. 31 and 38 on the New York Division (between



Philadelphia and New York) the schedule time of which trains is about 47 miles per hour, which includes two stops in 90 miles.

During the week ending June 18, 1881, the consumption



therefore the total consumption of coal was 7.209 × 8.32 = 59,978.8 lbs. If we take the same car mileage for engine No. 724, we would have a consumption of coal of $7,209 \times 10^{-2}$

12.76 = 91,986.8 lbs., or a saving in one week of 91,986.8 — 59,978.8 = 32,008 lbs. by engine No. 10.

A number of indicator diagrams taken from the left side of the latter engine April 28, 1891, are also published here-

The following statement of figures scaled from these diagrams will be of interest to many readers:

No. o	Cut-	Boiler	Initial pre		Pressu	re at	Back sur	7	
of diagram	off in inches.	r pressure	Front end	Back end	Front end	Back end	Front end	Back end	eed miles per
1 2 3 4 5 6 7	13 9 8 716 7	138 138 135 135 135 135 135	122 126 119 119 123 120 128	124 129 117 116 120 119 125	116 104 87 85 84 80 82	116 108 88 85 85 85 82 85	3 6½ 7 8 8½ 6	3 51/2 8 8	50 52 55 60 64

Next week engravings of the reversing gear will be published, which will complete our illustrations of these engines

Contributions.

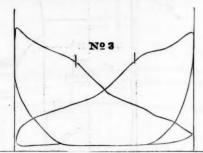
Passenger Station Conveniences.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The railroad travek has more needs than even a soldier on the march; in fact, he is in want of a mert every thing

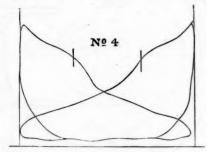
and necessity of life except clother. He needs, above all, information, shelter, heat, air, rest, food, water (soap and a towel), a place for his baggage and somewhat to amuse him; all of which have been provided for him by railroad companies although not quite in the order of their importance.

anies, although not quite in the order of their importance In the West the traveler is too apt to find himself treated as a person quite familiar with the road upon which he is traveling, butin great need of information about every other route in the country. Arriving at a way station he is quite likely to find the ticket office closed, and no time-table or map of the line anywhere to be found among the numerous attractive advertisements which sport in the ticket window like a leafy parti-colored bower. Even if the



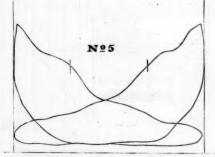
traveler know within an hour the departing time of the train re is, perhaps, no clock there to tell him when that hou will be, or if, knowing the train time to a second, he desires to compare his watch with the standard time of the road, he

to compare his watch with the standard time of the road, he can only do so by waiting for the train and timing that. Such is the dark side of the picture. How great the contrast as he stands at the road's terminal station at Chicago! The traveler has risen from poverty to great affluence, and stands a prince in royal dwelling with a regal staircase flooded with soft, rich light from costly windows of stained glass. He can lunch or dine; he can even wash and be once more clean; or he can rid himself of baggage and stroll away in safety under the protection of a time-table and a corrected watch. If he-choose to remain, he has



warm and, on the whole, pure air, and nearly as easy a seat as though he sat on one of his own wooden-bottom kitchen chairs

In general, station construction supposes (and that only so far as the great American heart is concerned) a prepon derance of the "esthetic" craving in the traveler. It is one of the lower but not vulgar forms of our craving after all that is best in life. Let it not be supposed that because we have spoken of the inconvenient station of the West, the institution is either general or peculiar to it. There are roads of the East which have, proportionately, a larger pas-senger traffic and poorer stations at important points; for it is remarkable what a quantity of good work can be done in



a poor shed of a shop, the most important part of a statio being shelter. And this point of shelter is the one in which stations are upt to be deficient, at least on double-track

Danger of accidents on such roads requires that the pas-sengers get on and off that side of the road which is away from the tracks; but the Philadelphia, Wilmington & Baltire is the only road which I at this moment recall as fur-hing a platform and shelter on both sides of the track at stations. The shelter sheds of the Philadelphia, Wilminga & Baltimore are wortby of being copied everywher at the two tracks pass on the same side of the statio platform

In such sheds, little can be said of the need of pure air but in the station-house, which stands opposite, this and a eter with a large regulated heat are a necessity. A thermometer with a l red mark for the maximum and another for the minin temperature would assist in regulating the heat of the waiting-room, and the use of the radiating heat of the stove as a ventilating force would do much for its purity of nice

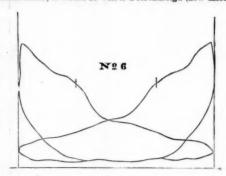
The room, however, must be warm, even if the air is the fore bad, but it will say little for human ingenuity if su remains the case.

At the terminal stations a new set of problems is to be met and solved. Why should not the wall present a map of the road on the grandest scale? There is such a wall-painted, gigantic map in a well-known and not unimportant depot. Why, too, should not the time-table have its own map, serpent-like in form, and with every station marked en bloc with a picture of its very building, in addition to its name.

The Erie has such a map (without pictures) for foreign circulation.

The traveler, however, is apt to be a hungry man. If he be a wise one, he knows how to save his necessary sleep by tak-ing his early breakfast at the lunch room or the depot restaurant; and, therefore, should prices be moderate in order to tempt him, coffee with meals, 5 cents, sandwiches not more than 10 cents, a good breakfast by contract at not more than 35 to 50 cents. (At one of the finest permanentroom hotels for gentlemen in New York, breakfast is sent to to the room for 20 or 25 cents (choice) in nice style.) It is possible to have excellent coffee at such station dunch counters, but unless somebody in the passenger service demands it (and not always then), will a prime and worthy cup of this, the traveler's beverage par excellence, be found. There are a few places in the country where such a cup can surely be had, but not many where it may be gotten at all hours.

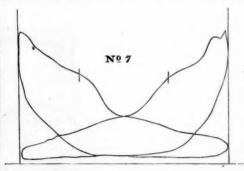
Quite as important as the goodness of the coffee is the resourant clock; it would be well if a certain sign (now discov-



rable in at least one lunch room) could be added to the This sign reads:

"THIS BELL WILL STRIKE THREE MINUTES BEFORE THE

The bell is not necessary to the dusty, hungry arrival; but oap, water and a clean towel are. One of the fine Chicago tations puts its station wash-basius in the barber's shop, which (if the ladies' room also have one) is an almost perfect Everything is sure to be clean there,



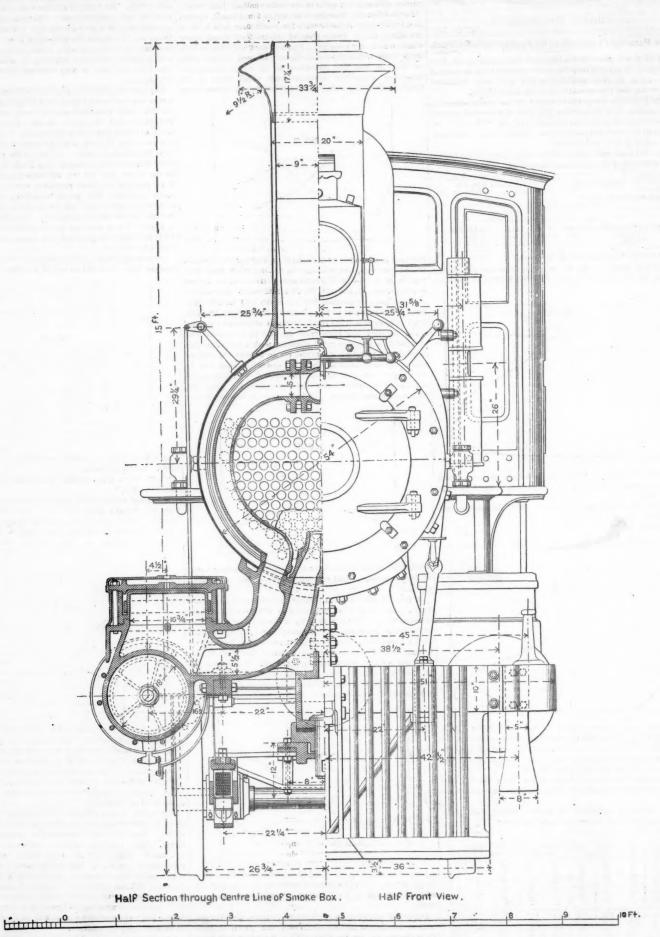
cluding the towel, and when one's coat is off, one is ready to be shaved. The wash-room at the station saves the trouble, time and the expense of a room at a distant hotel; if now there is a package room he will soon be ready to attend to his business, especially if a tin-bound directory of the city or town be chained in an in-the-way place. Such a directory does large service (in front of a

drug-store) on Broadway.

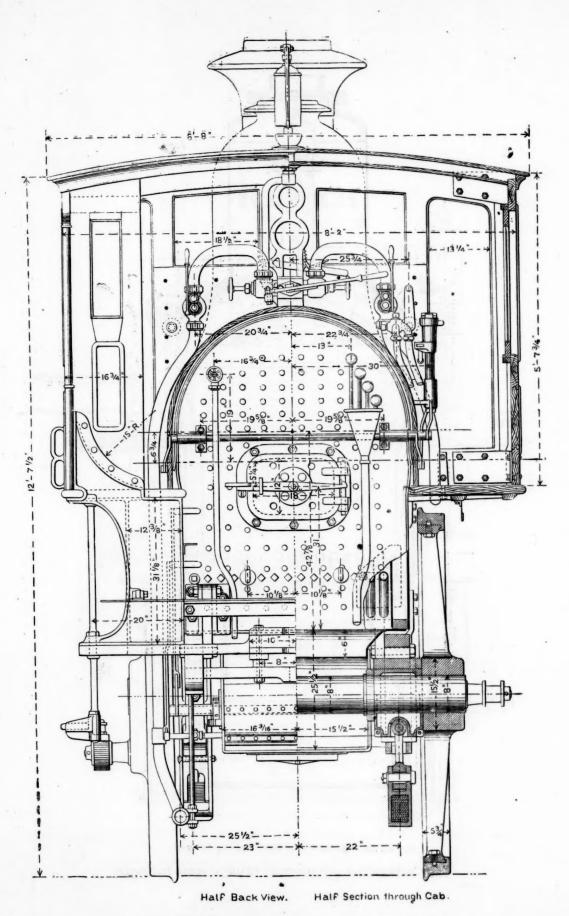
The water cooler, the station-telephone, the newstand (kept at least decent in its pictorial display), the station kept at least decent in its pictorial display), the station porter, having the company's uniform or its badge, the package express, allowing the sending of small packages at low rates; all these are possibilities, easy of accomplishment. The traveler is a stranger from home, he appreciates a favor, and the company will lose nothing if it makes all small favors free and puts the price where the traveler prefers it—on the ticket. The American does not like to be worried by small expressed by the appreciates at a pad is not enses, but he appreciates all you can do for him, and is not

unwilling to pay by contra I would say a final word for the hotel station, and its near-by commercial show room for the benefit of commercial ravelers. Such a hotel has advantages which even its traveiers. Such a note has advantages which even its exposure to the noise of the locomotive does not outweigh. The hurry to a station for a late train, heavily burdened perhaps with a bolted breakfast or dinner, has told severely on many a faulty heart. Let us first have safety from all dangers, including the weather, the unexpected train, the close, hot room, the indigestible and anxious lunch, and then give us please, all the conveniences you can and each then give us, please, all the conveniences you can, and each of us, my dear Mr. Manager, will gladly pay his share of admiration to that costly pile of brick and stone and glass.

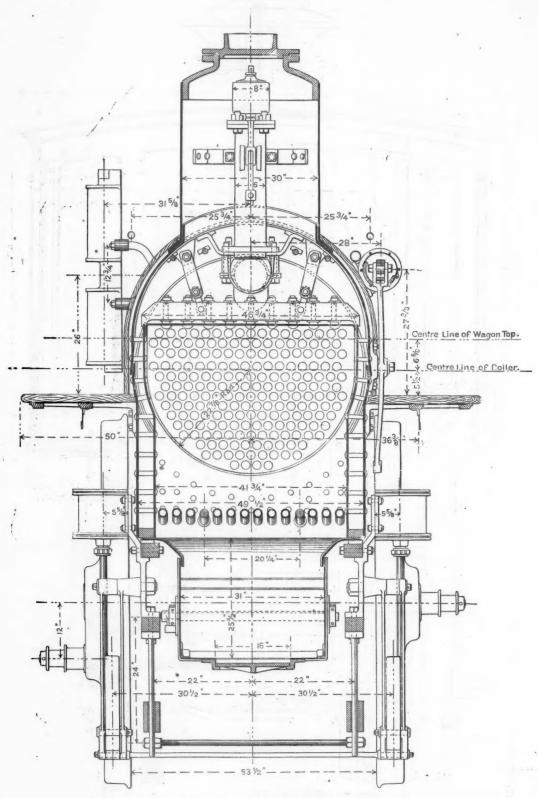
Respectfully yours,
THE UNCLASSIFIED TRAVELER.



FAST PASSENGER LOCOMOTIVE, PENNSYLVANIA RAILROAD

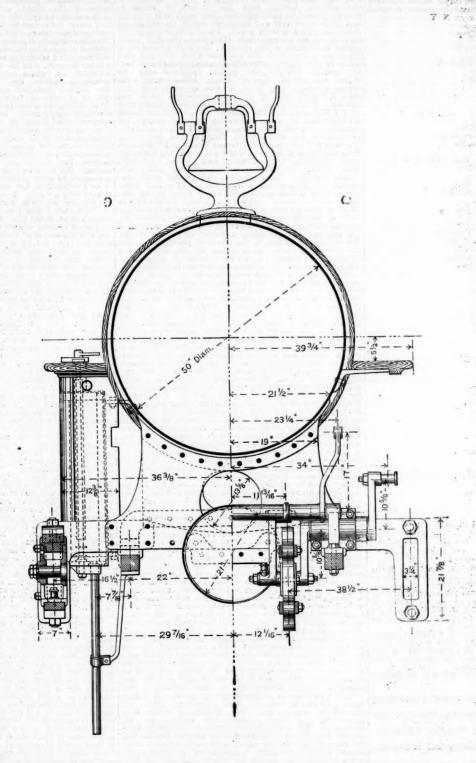


FAST PASSENGER LOCOMOTIVE, PENNSYLVANIA RAILROAD.



Section through Centre of Dome looking forward .

FAST PASSENGER LOCOMOTIVE, PENNSYLVANIA RAILROAD.



Half Section, Front of Guide Yoke looking back. Half Section, Back of Guide Yoke looking forward

FAST PASSENGER LOCOMOTIVE, PENNSYLVANIA RAILROAD.

American Society of Mechanical Engineers—Second of the Stevens Institute of Technology, read his annual address, a paper of interest, reviewing the advancement and the paper of interest, reviewing the advancement of the stevens and the paper of interest, reviewing the advancement of the stevens and the paper of the stevens and the paper of the stevens and the paper of the stevens and the stevens

This meeting was held in the theatre of the Turf Club in New York, on Thursday and Friday, Nov. 3 and 4. Of the meeting the New York Times remarked:

"It was not a gathering of the hard-handed sons of toil, but one of intellectual, admirably dressed and well educated gentlemen, who were representatives of their very useful class. Theorists they are to a certain extent, but as a rule they are practical theorists, men whose ideas are absolutely necessary in a nation like this, in whose manufacturing interests they play such an important part."

Between sixty and seventy members were present during the session, the average attendance being about half that number. The following list of members present is copied from the American Machinist:

Between sixty and seventy members were present dur the session, the average attendance being about half to amber. The following list of members present is copt of the American Machinist:

Francis B. Allen, New York City.
Thomas R. Almond, Brooklyn, N. Y.
Stephen W. Baldwin, New York City.
James C. Bayles, New York City.
Auguste C. Christiansen, Brooklyn, N. Y.
Charles P. Deane, Holyoke, Mass.
Albert H. Emery, New York City.
Alex, Gordon, Hamilton, O.
F. F. Hemenway, Troy, N. Y.
Wm. Hewitt, Trenton, N. J.
D. S. Hines, New York City.
E. D. Leavitt, Jr., Cambridgeport, Mass.
W. Barnet Le Van, Philadelphia, Pa.
Lowis F. Lyne, New York City.
David N. Melvin, Linoleumville, Staten Island, N. Y.
Carleton W. Nason, New York City.
C. C. Newton, Philadelphia, Pa.
Thomas Whiteside Rae, New York City.
Albert Stearns, Brooklyn, N. Y.
Allan Stirling, Luzerne County, Pa.
Prof. John E. Sweet, Syracuse, N. Y.
Prof. Robert H. Thurston, Hoboken, N. J.
Prof. Wm. P. Trowbridge, New York City.
Samuel S. Webber, Manchester, N. H.
W. H. Weightman, New York City.
Jerome Wheelock, Worcester, Mass.
Wm. H. Wiley, New York City.
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Wm. H. Wiley, New York City.
Lyerome Wheelock, Worcester, Mass.
Wm. H. Wiley, New York City.
Lyerome B. Moiler, New York City.
H. A. Mason, Chicago, Ill.
C. H. Green, Chicago, Ill.
C. H. Green, Chicago, Ill.
J. B. Root, New York.
H. Fred Halley, New York.
Alex. Miller, New York.
H. F. Shyder, Williamsport, Pa.
H. F. J. Porter, Trenton, N. J.
George N. Comly, Edge Moor, Del.
Jas. P. Davis, New York.
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Jas. P. Davis, New York.
New York.
H. F. Shyder, Williamsport, Pa.
H. F. J. Porter, Trenton, N. J.
John Cotter, Norwalk. Conn.
Chass. Sperry, Westbrook, Con

Joshua Rose, New York.

The Treasurer's report showed receipts, since the Altoona meeting held last August, of \$706.00 and disbursements of \$587.15, or a net gain of \$118.85, with outstanding dues from members of \$150. The Treasurer further reported that during his term of office he had reclived from all sources \$6,891.43, and expended \$3,749.85, leaving a halance of \$3,141.58, of which \$2,277.50 has been invested in United States 4 per cent, bonds.

After making this report the Treasurer verbally resigned the office, giving as a reason that its duties required more time than he could spare, and that he thought that "it will probably be better for the Society and the newspaper press to be wholly independent of each other."

The following new members were admitted to the society:

MEMBERS.

William S. Auchincloss, No. 209 Church st., Philadelphia William S. Auchineross, No. 200 Country
Pa.
W. S. G. Baker, President Baltimore Car Wheel Co., Baltimore, Md.
Albert W. Danforth, Engineer Shanghai Cotton Co.,
Shanghai, China.
E. F. C. Davis, Philadelphia & Reading Coal & Iron Co.,
Pottsville, Pa.
W. W. Drummond. Louisville, Pa.

E. F. C. Davis, Philadelphia & Reading Coal & Iron Co., totsville, Pa.
W. W. Drummond, Louisville, Pa.
Henry W. Gorringe, Lieut. Commander U. S. N., No. 32 Vaverley place, New York City.
Howell Green, Jean-swille, Luzerne Co., Pa.
A. C. Hobbs, Supt. Union M tallic Cartridge Co., Bridgeort, Conn.
David Jones, P. A. Eng. U. S. N., No. 536 Marshall st, hiladelphia, Pa.
Joseph Mcrgan, Jr., Cambria Iron Works, Johnstown, Pa.
Franklin Phillins, Hewes & Philling, Lon Works, News.

Joseph Mcrgan, Jr., Cambria Iron Works, Johnstown, Pa. Franklin Phillips, Hewes & Phillips' Iron Works, New-k, N. J.

ark, N. J.
George H. Phillips, Hewes & Phillips' Iron Works, Newark, N. J.
N. S. Possons, Supt. Brush Electric Co., Cleveland, O.
Oliver P. Remick, Asst. Eng. U. S. R. M., U. S. Rev.
Steamer "Dexter," Newport, R. I.
Richard P. C. Sanderson, No. 39 South William st., New
York City, P. O. Box 1,339.
Theodore R. Scowden, No. 1,220 Lexington av., Cleveland, O.

of the Stevens Institute of Technology, read his annual address, a paper of interest, reviewing the advancement made in mechanical engineering, especially during the last "Our Progress in Mechanical Engineering," and, in opening, he referred especially to the superseding of wood and ron, as used in construction, by steel, and to the even stronger and more substantial alloys in which copper and nickel play important parts. The necessity of complete inspections and more substantial alloys in which copper and nickel play important parts. The necessity of complete inspections and more substantial alloys in which copper and nickel play engineers was dwelt upon at length; and the methods employed by eninent scientists of Europe and by some of the larger manufacturing establishments of this country, notably the Pennsylvania Raliroad Company of the speaker holding that the system of examination introduced by these companies had resulted in saving in a single investigation of the entiry cost of the examination introduced by these companies had resulted in saving in a single investigation of the entiry cost of the examination introduced by these companies had resulted in saving in a single investigation of the entiry cost of the examination in the country with \$200,000,000 capital employed, as against \$122,000,000 capital employed, as against \$122,000,000 capital employed only 10 years ago, these figures being taken from the country with \$200,000,000 capital employed to 150,000 men, and the value of the produced is about \$50,000,000 the way of the produced in the substantial produced in the produced is about \$50,000,000 capital employed only 10,100 ca

Theodore R. Scowden, No. 1,220 Lexington av., Cleveand, O.
George W. Weeks, Clinton, Mass.

JUNIORS.

Henry A. DuVillard, Corliss Steam Engine Co., Provilence, R. I.

D. H. Hotchkiss, No. 29 Geddes st., Syracuse, N. Y.

Charles T. Porter, of Phil delphia, read a paper of special
sterest to practical engineers on a new method of arranging
and keeping their drawings.

At the evening session, the President, Robert H. Thurston,

the theatre was uncomfortably cold, the members of the society sat and shivered and listened to the papers presented by other members, and enjoyed them as fully as men who are in a state approaching freezing can enjoy anything. The first paper read was on a new method of screw propulsion, a theory advanced by John B. Root, of the Abendroth & Root Manufacturing Company, No. 28 Cliff street, New York, by which he proposes to obtain a much greater force and speed with a less expenditure of power and fuel. His plan, in brief, which was, however, explained in his paper at great length, is to do away with the present horizontal shafts and the prependicularly hung screws now in use in all vessels in which the screw is the propelling power. Instead of this arrangement he proposes to place the engine well in the stern of the vessel, and have it connected directly with a short shaft, at the end of which is hung the propelling screw, not perpendicularly, but at a proper engle to the incline of the axis or shaft so as to do away with much of the sider resistance that has to be overcome by the present method of adjusting the screw. He claims that this method will result in a marked gain of power, and will do away, in a great measure, with the chances of the breaking of shafts, accidents of which character are now constantly correctly and the engines stationed annidships. To prove his theory of a gain of force and power in such a method of placing the screw he exhibited a formidable array of trawings and formule. His paper was the occasion of a very annuated discussion of the first proved the theory as one at least worth investigating. Mr. Root said he had expended \$5,000 in experiments to prove the truth of his theory, and had tried to not actually a stanger and make a trip across the ocean and back in order to prove beyond a possibility of doubt that my deductions are faultiess? I can't afford to do that, but I assure the members thought differently, however, and several approved the theory as one at least worth the procee

"Railway Statistics," which was simply a collection of observations made on a tour of inspection of the railroads of Dhio during the last year, under the auspices of the State Railroad Commissioner.

C. J. H. Woodbury, of Boston, who was to have read a paper upon "The Fire Protectic nof Mills" was not present, and his paper was read in part by the Secretary, and printed copies of the paper were distributed for the consideration of members. The paper dwelt at length upon the various methods of protecting mills in which textile fabrics are manufactured from fire, so that a reduction of taxation in the way of insurance may be secured.

"Standard Weights and Measures" was the title of a paper read by W. E. Partridge, one of the editors of the Pron Age, in which he detailed the troubles he met with in striving to obtain a correct standard of the measures of length, weight and quantity of this country.

William Barnet Le Van, of Philadelphia, read a paper on "The Lifetime and Age of Steam Boilers," in which he gave it as his opinion, formed after careful observations, that the age when the ordinary steam boiler should be retired as no longer trustworthy is 10 years.

The paper occasioned a lively discussion, none agreeing with the speaker that a boiler was worn out by 10 years' use. It was stated that in England boilers were permitted to be used for 16 years in case they passed the proper inspection, and when the tensile strength of the iron is 50,000 lbs. This was generally considered a better estimate of the age of boilers than that offered by Mr. Le Van. Mr. J. B. Root held that the whole difficulty might be remedied by the use of sectional boilers, where the explosion of one section could do but little damage. Several members held that care was all that was necessary to prolong the life of boilers, and one member cited the case of the boilers in the steamer Old Dominion, of the Old Dominion Line, which had been in use for 10 years, and in which there was no evidence of age, because they have had the best of care

A Federation of State Railroad Commissioners-The Objections.

The following is a letter addressed to Maj. Campbell Wallace, of the Georgia Railroad Commission by Mr. W. L. Bragg, President of the Alabama Commission; it is parily in answer to the letter of Commissioner Johnson, of Kentucky, which we published in the number for Nov. 4, page 612. The letter is dated at Montgomery, Ala., Oct. 20, 1881:

DEAR SIR: I have just read, in Atlanta Constitution of the 18th instant, with much interest, a letter addressed to you by Hon. J. Fletcher Johnson, of Kentucky, in which he discusses the report of the Committee on Business in the late

convention of railroad commissioners at Atlanta. That committee, as I understood it, was appointed by the convention simply for the purpose of reporting business to be considered by the convention, and it certainly performed nothing more than that duty. There was no discussion in the committee, so far as I am aware, which involved any committee for the consideration of the convention. This was stated by Hon. Samuel Barnett, of Georgia, in the debates that occurred in the convention upon this report, and was, as I supposed, so understood by all who were present. I understood, and I think all the committee so understood, that the committee would dis tharge its duty by reporting to the convention for its consideration business which presented important and unsettled questions relative to the railroad transportation problem.

When the report of the committee was being debated in the convention, I opposed the idea of a national railroad commission, and gave my reasons for it briefly at the time, which were in substance:

"I. That a nati-nal railroad commission could only regulate through rates, which in general were already much lower than any railroad commission would put them, and were forced to be so by the intense competition of long contending lines, by rail and water.

"2. That a ustional railroad commission could accomplish no good, except perhaps in a few instances to adjust and correct the inequalities of pooled rates.

"3. That one great evil which, to my mind, would certainly follow the creation of a national railroad commission would be that it would be frequently clashing and conflicting with, and attempting to over ride, the powers and juisdiction of state railroad commissions, in states having such commissions, and in this way allone would be productive of much more harm than it would ever do good.

"4. That there was already an army of nearly 100,000 federal officeholders in this country, and I was opposed to creating any more, unless the necessity for it was actual, and the benefits to be derived fr convention of railroad commissioners at Atlanta. committee, as I understood it, was appointed by the c tion simply for the purpose of reporting business to

real.

"5. That the chief troubles in the transportation problem arose from local rates in each of the states, and that this could be corrected by each of the states acting for itself, by a railroad commission of its own, and that a national railroad commission, even if created, could not legally be clothed with jurisdiction to correct this evil."

Ct ier members of the convention indicated similar views; and others of them opposed the idea of the convention taking any steps looking to a recommendation on the subject to Congress.

road commission, even if created, could not legally be clothed with jurisdiction to correct this evil.

Ct er members of the convention indicated similar views; and others of them opposed the idea of the coavention taking any steps looking to a recommendation on the subject to Congress.

In the debate that then occurred nothing, so far as I recollect, was said by any member on the subject of having a national railway commission composed of one member from each state railroad commissions. This proposition is the set forth in the letter of Mr. Johnson to you.

That an act of Congress be recommended to pass constituting the chairmen of the various railroad commissioners of the union having such railroad commissioners of the chairmen of the various railroad commissioners of the chairmen of the various railroad commissioners of the appointed by the President of the United States, to act as chairman, which should be vested with plenary power to settle the questions arising out of the inter-state traffic on railroads, and that the decisions of such a commission so constituted should be without appeal.

A proposition substantially the same as this was discussed and considered by the railroad commissioners of Alabama, saortly before they attended the late convention at Atlanta, and they concluded that it was wholly impracticable, and that they would not present it to the consideration of the convention for the following reasons:

Because there are provisions in the state constitutions of each of the following states, now having railroad commissioner from at one and the same time holding the two offices of state railroad commissioner, these many provisions in the state constitutions of each of the following states, now having railroad commissioner, these many the same time holding the two offices of state railroad commissioner, these constitutional provisions each provision in the state constitutional provisions can be applied to the provision of a state railroad commissioner, these constitutional provisions on the resul The state constitutions of each of the following takes nor like state of tracts of congress may be found of value after giving the practical tests ancested the provision manely, Delaware, Pennylvania, Rhode Island,* Nevada, may be found of value after giving the practical tests ancested the provision of the state of Congress and Texas.

A we look back some 30 years we have a very clear that the provision of the initiatory work in car-painting; the painting the previous of the state in the requisition of the initiatory work in car-painting; the painting that the previous of the state in the requisition of the initiatory work in car-painting; the painting that the previous should pass an act requiring a member of a state in the requisition of inter-state commerce, in addition to the performance of the duties which he is required to perform the performance of the duties which he is required to perform by the laws of his state in the regulation of the constitutional provisions to which I have been provided that he should be paid as askery for such service the provided that he should be paid any such asking or not, it would certainly in motion, and the early provided that he should be paid any such asking or not in the state of the united States, and if the United States, and therefore within the inhibitation of the constitutional provisions to which I have be a state of the united States and the state of the constitutional provisions to which I have be a state of the united States and the state of the state in the paid of the state is a state paid of the constitutional provisions to which I have a form the paid of the constitution of the constitution of the constitutional provisions to which I have be a state of the constitution of the constitution of the constitutional provisions to which I have be a state of the constitution of the cons

or department of the government of the United States, and would be required to make its reports to Congress in some shape, or to the President, or to the head of one of the departments of the governments of the United States. I suppose Congress would hardly require such a board to make a report to each of the states, but if so it would be the first time in the history of this country that Congress has ever, by a solemn statute, created a board for the performance of duties to all the people of the United States and then require that board to report to, and be responsible to, any state government.

that board to report to, and be responsible to, any state government.

I might and could say a great deal more upon this subject, for it is one of interest to the public as well as individuals, but I have already written at more length than I intended when I commenced this letter. I feel like apologizing to you for having written to you so long a letter upon this subject, but I know it is one in which you feel a great deal of interest from a public standpoint, and we, over here in Alabama, look upon you as the Nestor among all the railroad commissioners of the United States.

I am, as ever, your friend, W. L. Bragg, President Railroad Commission of Alabama.

The Progress of Car Painting.

The following article is part of a paper read at the last convention of the Master Car-Painters' Association by Mr. R. McKeon, Secretary of the Association and Master Car-Painter of the New York, Pennsylvania & Ohio road:

R. McKeon, Secretary of the Association and Master CarPainter of the New York, Pennsylvania & Ohio road:

There are none here to-day but are willing to admit that
in all branches of mechanical work the reduction of labor is
a saving and denotes progress. Of late years the process of
painting a car has been simplified; we have done away with
a large amount of unnecessary labor and the work is equally
as well done. In days gone by the outside finish of the car
was equal if not better than the inside. A very fine surface
was the great object, and no job was considered complete
without a fine gloss, free from any defects; the result of this
was a large amount of labor with no real benefit to the wear
of the ear or to our railway companies.

In painting a car, durability can be secured without a great
expense, but good judgment is necessary in the matter of
time and in the proper mixing and application of the colors
employed. Some will ignore past experience in this, while
others may think in their own minds that they have discovered the straight road to perfection, and they desire no
aid or assistance. Within their own fertile brain lie the
whole secrets of the trade; but we believe that the most successful are those who think it best to improve on the past experience of old painters, which is of great help to us if we
desire to attain satisfactory results.

The onward march of progress has perhaps a deeper hold
on our Western car painters than on those of the East. If
we were not somewhat modest, which is one of our failings,
we would call attention to our Western roads as being far in
adv nee of the Eastern, both in the design and in the finish
of their passenger coaches; the painter therefore has more
room to show his ability and taste in the decoration and
finish. We have examined the passenger rolling-stock of the
several lines terminating in this city and its suburbs, and
compared them with the same class of cars running into
Chicago and St. Louis over the principal roads, and our decision given wit

cision given without partiality is in layor of the constraints. We do not mention this in disparagement of our Eastern painters, for they are equally as able to design and execute as those in the West, had they the opportunity; in fact the West to-day is indebted to the Eastern states for some of her most successful car painters.

But in noting the advance made we must give to the master car-builder a just share of the credit for the style and finish of our cars, for without a neat and tasteful design shown all through the construction, the painter's art would be lost on it, as there must be design and finish in the painting, appropriate to the style and finish of the woodwork to secure that harmony which gives to the car a beautiful and pleasing effect.

secure that harmony which gives to the car a beautiful and pleasing effect.

All car-painters have their own peculiar method of painting a car and they will disagree as to the proper mode of proceeding in the work; they are by no means unanimous in their views, and this we are pleased to see, as it points more clearly toward progression. Again, there are a class of painters who hold to an ancient custom; they would not dare to vary their plan of finishing a car; they cannot see where there is any room for improvement, while the wide-awake painter has eyes and ears, both necessary qualifications, wide open to catch everything relating to the business, and is willing to try new methods and to adopt what may be found of value after giving the practical tests necessary.

out English varnish—at least for the finishing costs; but a revolution has taken place, and to our master painters is dua not a little of the eredit for the great improvement in our American varnishes, as they demanded good stock, and our varnish-makers responded with increased facilities and large capital to the constant and increasing wants of the railway shop and the car and carriage manufacturers of the country.

There has been but little of what painters term the secrets of the trade made public until within the last fewmen in ignorance, but the Master Car-Painters' Association is now giving to the fraternity at large the benefit of their long experience in the paint shop, and as they meet to getter annually each one is willing to give what practical knowledge he may have acquired to others, thereby assisting one another, and thus advancing the art. By this free interchange of views some pigment may yet be found that will supersede all others which have been employed, and a complete revolution take place in car painting.

This is the age of progress, and we look for something and minerals now in lue, and the railway companies will be the first to receive the benefit of the painters' discovery in the reduced expetits of maintaining their rolling stock.

The color of passenger cars has been subject to many changes in the past. They have been painted all shades from a white to a very dark brown. Thirty years ago and later, very light colors were popular, and until Pullman introduced the dark color, a linen or straw color was the rule; only in rare cases did we see a car painted dark, and coasionally some road stat have accepted the dry color entirely, and we predict, with good revsons for such pradictions, that a few more years' experience will convince those who are studying economy on our railways that the light colors are by far the best adapted for their passenger equipment: they may ignore the judgment of the painter for a time, but we can assure them that the day is not far distinctive, and the painter

disposition to test others' methods or to improve on the country of the country o

A Mistake.

Queer things are seen at railroad stations sometimes, and one of the queerest is the following, reported by the Terre Haute (Ind.) Express:

"A very laughable occurrence was witnessed at the union depot last night. When the train from the south stopped, a lady alighted, and seeing a gentleman standing by whom she supposed to be her husband, she ran toward him, and throwing her arms about his neck, showered kisses upon him. The gentleman made no objection, but when she ceased her osculation a gentleman standing near by remarked: Well, Laura, haven't you made a mistake ? Laura turned to him in astonishment, and flying into his arms buried her blushing face on his shoulder, saying: 'Lord bless me. Steve, I thought it was you! why did you not speak?"

Train Robbers.

Train-robbery does not seem to prosper east of Missouri.



Published Every Friday. 8. WRIGHT DUNNING AND M. N. FORNEY.

EDITORIAL ANNOUNCEMENTS.

asses.—All persons connected with this paper are forbid-den to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

ddresses.—Business letters should be addressed and drafts made payable to The RAIL ROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEFARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS We give in our editorial columns OUR OWN opinims, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

WESTERN GRAIN RECEIPTS FOR TEN MONTHS.

Receipts and shipments of grain and flour of all kinds for the ten months ending with October have been, in bushels, for the past six years:

Year.	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1876	171,957,650	151,851,764	177.049.823
1877	163,085,642	140,965,309	163,371,456
	217,367,565	177,955,701	249,787,476
1879	235,004,895	203,293,339	286,267,424
1880	$\dots .272,925,352$	233,975,926	296,734,321
1881	247,057,935	211,299,877	248,537,384

Compared with last year there is a decrease of 25,867,000 bushels (9.5 per cent.) in the receipts of the eight Northwestern markets, a decrease of 22,676,000 (9.7 per cent.) in their shipments, and a decrease of 48,197,000 (16.2 per cent.) in the receipts of Atlantic ports.

The Northwestern receipts and shipments have been exceeded only in 1880, but the Atlantic receipts were larger in 1879 and 1878 also. One of the most notable features is the decline of the excess of Atlantic re-ceipts over Northwestern shipments. The differences have been as follows:

	1	Á		8	ı	1	ti	ic	,	1	34	C	e	ij	p	t	8	•	92	K	c	e	e	d	16	30	ì	ľ	Vo	orth	we	ste	rn	ship	m	ents
B	7		 								 																			25.	198	059	bu	shels	in	1876
B	7				-																									22,	406	147	,	44	44	1877
B	v.		 																				۰							71,	831	775	,	64		1878
B	V																										2	 		82,	974	085		6.6		1879
B	v					:								ì									٠							62,	758	395	5	66	45	1880
																														37,				66	6.6	1881

The excess of Atlantic receipts over the receipts of the eight Northwestern markets depends on more than one cause. When the production is large east of the Mississippi and further south than Peoria, this tends to increase the difference, as there is none of the great markets except Toledo which this grain can reach conveniently. When the shipments are chiefly from country further west and north, they nearly all pass through one of the lake markets. But the through shipments are promoted by low rail rates, which prevent the grain going to a lake port unless that is on the direct rail route to the East, and this fact has this year worked in favor of such through shipments. The crop of wheat south and east was extraordinarily large last year, but has been very poor this year, and so far as the last harvest has affected this year's shipments (and it has done so greatly ever since June probably), this goes towards explaining the great decrease in the excess of Atlantic receipts over the Northwestern shipments.

The receipts of grain of all kinds (not including flour) of the eight reporting Northwestern markets for the ten months ending with October and for the month of October this year and last have been, in bushels:

October this	, cur una		,			
	-Ten n	nonths.	October			
	1881.	1880.	1881.	1880.		
Chicago	106,850,473	121,280,578	11,240,321	17,754,674		
Milwaukee	14,228,014	13,803,316	1,562,269	2,719,925		
Toledo	19,935,973	33,757,342	1,143,509	4,506,424		
Detroit	6,740,954	8.816,131	703,113	2,235,241		
Cleveland	3,892,894	5,564,351	306,636	664,100		
St. Louis	35,530,962	40,375,636	2,179,754	4,480.804		
Peoria	23,035,780	20,283,495	2,165,900	2,218,450		
Duluth	1,546,761	3,357.008	804,770	746,438		
				05.005.050		

ten months of 35,700,000 bushels, or $14\frac{1}{2}$ per cent., and for the month of October the decrease was 15,200, 000 bushels, or 43 per cent. For the ten months decreases are chiefly at Chicago (14,430,000 bushels). Toledo (13,821,000) and St. Louis (4,845,000). There were small increases at Milwaukee and Peoria.

In October there were decreases everywhere except at Duluth, largest in amount at Chicago (6,514,000 bushels and 36% per cent.), but in proportion larger at all the leading markets except Peoria, as 1,158,000 bushels $(42\frac{1}{2} \text{ per cent.})$ at Milwaukee, 3,363,000 (75 per cent.) at Toledo, and 2.301,000 (51 per cent.) at St. Louis. The decline in the Toledo receipts is phenomenally large, and not explained, as it might have been earlier in the season, by an increase at St. Louis. We have before pointed out how this market's receipts have fallen off since last June. In that month its receipts were nearly the same as last year, and for the first half of the year it received 11,696,850 bushels this year, against 14,327,457 last, a decrease of 18.4 per cent., while there was a decrease of $8\frac{1}{2}$ per cent. in the total of the eight markets in the same time, and of 14 per cent. in the Chicago receipts. But in the four months since June the Toledo receipts have fallen from 19,-429,885 bushels last year to 8,238,723 this, or 57.6 per cent., while the receipts of the other seven markets has fallen only 131/4 per cent. and of Chicago only 10 per

The percentage of the total receipts arriving at each market in October and the ten months was:

		October		onths.
	1881.	1880.	1881.	1880.
Chicago	55.9	50 3	50.5	49 0
Milwaukee	. 7.8	7.7	6.7	5.6
Toledo	6.7	12.8	9.4	13.7
Detroit		6 3	3.2	3.5
Cleveland	1.5	1.9	1.8	2.3
St. Louis	. 10.8	12.7	16.8	16.5
Peoria	. 10.8	6.2	10.9	8.2
Duluth	4.0	2.1	0.7	1.4
Total	100.0	100.0	100.0	100.0

Chicago keeps up the great lead that it has had ever since May, receiving nearly 56 per cent, of the whole in October, against 58 in September. 551/2 in August, 601/4 in July and 573/4 in June; while in May its receipts were but 411/2 per cent. of the whole, and in April 30 per cent., and for the first quarter of the year 361/2 per cent. In the five months ending with May it had 36.3 per cent. of the total receipts; in the following five months 57.5 per cent. Chicago and Milwaukee together received 63.7 of the whole this year in October, against 58 per cent. last year; while Toledo and St. Louis together received 16.5 per cent. of the whole this year, against 25.5 per cent. last year in October. The Lake Michigan ports are re-ceiving an unusually large proportion of the whole, in spite of the fact that the low rail rates have deprived them of their usual advantage, which consists of the lowest rates to the seaboard, afforded by the lake and canal route. The season since June 17 has been unusually favorable to shipments from interior points south of the lakes, as from St. Louis, Peoria, Indianapolis and the scores of smaller places which do not But of these places only Peoria seems to have profited by the low rail rates. It has done so very decidedly, however, and for the ten months stands third in the list of Northwestern grain markets this year, ahead of Toledo, which last year received two-thirds more than Peoria, as well as ahead of Milwaukee, which until last year always received more than it, and frequently twice as much. In October Peoria re-ceived very nearly as much as St. Louis even, and thus comes very near to the second place among grain receivers.

The receipts since June have been affected to a considerable extent by this year's crops or by the prospects for them. From the southern part of the wheatgrowing country some of the new wheat was shipped in July this year, and a great deal last; but the effect of the new crop is felt in the shipments of the surplus of the old crop at first more than in those of the new one probably. And this is especially true of corn, the greater part of which is always consumed on the farms where it is grown, so that the failure of the growing crops may easily determine whether the farmer will market a large quantity or none at all. Besides, the low rail rates have been exercising their effect since June. On this account we divide the ten months into two periods, one including the six months ending with June, and the other the following four months ending with October. In the first, it should be said, the ter rible winter greatly affected the grain movement, and especially reduced receipts at Chicago and Milwau-

For the six months ending with June and the four months since June, the receipts of the several markets and the increase or decrease compared with last year,

There is a decrease in the aggregate receipts for the | increase or decrease, and the percentage of the total

	-Thou	sands	of bush	iels-	-Per cent.	of total
Jan. to June:	1881.	Inc. o	r Dec.	P.c.	1881.	1880.
Chicago	46,792	Dec.	7,723	14.2	43.7	46.9
Milwaukee	8,084	Inc.	556	7.4	7.5	6.5
	11,697	Dec.	2.631	18.4	10.9	12.3
Detroit	3,662	Dec.	214	5.5	3.4	3.3
Cleveland	2,289	Dec.	40	1.7	2.1	2.0
	21,336	Dec.	461	21.1	20.0	18.7
	13,112	Inc.	2,227	20.5	12.2	9.4
Duluth	165	Dec.	857	84.0	0.2	0.9
July to Oct.:	07,137	Dec.	9,142	8.5	100.0	100.0
busy to oce					Per cent.	of total.
	1881.	Inc. o	r Dec.	P. c.	1881.	1880.
Chicago:	60,058	Dec.		10.0	57.4	50.9
Milwaukee	6.144		132	2.1	5.9	4.8
Toledo	8,239		11,191	57.6	7.9	14.8
Detroit	3,079		1,861	37.7	2.9	. 3.8
Cleveland	1,604	Dec.	1.631	50.4	1.5	2,5
	14,195	Dec.		23.6	13.6	14.2
Peoria	9,924	Inc.	526	4.2	9.5	7.2
Duluth	1,382	Dec.	954	36.6	1.3	1.8
Total1			26,334	25.2	100.0	100.0
In the first	half of	f the	vear	there	was a de	crease of

9,142,000 bushels, and Chicago's proportion fell from $46.9~\rm per~cent.~to~43.7,$ and Toledo's from $12.3~\rm to~10.9,$ while Peoria, St. Louis and Milwaukee gained in percentages. In the last four months there has been a decrease of 26,334,000 bushels, and Chicago has re_ ceived 57.4 per cent. of the whole, against 50.9, while Toledo has fallen from 14.8 to 7.9, and St. Louis from 14.2 to 13.6.

Perhaps the most notable fact shown by this divis. ion into periods is the larger decrease in the later period. The aggregate receipts have been 25 per cent. less than last year in the last four months, against but 81/2 per cent. in the first six months of the year, and in the latter period they have been encouraged by extraordinarily high prices and extraordinarily low freights. What the comparison with last year has been from month to month will appear from the following statement of the aggregate average weekly receipts of the eight markets in successive months.

	881.	1880.	1881.	1880.
Jan2,98	2.075	3,345,485	June7,407,757	5,828,990
Feb2,29	1,511	3,644,537	July5,509,393	6.879,839
March 3,16	32,592	4.262,562	August7,090,233	7.802,131
April 3,04				
May 4,49	1,851	6,161,798	Oct5,026,568	8,831,264

The large decline in receipts in the first three months of the year, equal to 25 per cent., was sufficiently ac-counted for by the bad weather; that of April and May (more than 20 per cent.), by the late spring, which kept farmers busy putting in their crops, and left them little time to go to market with grain. The increase in June was due chiefly, as we pointed out at the time, to the marketing of grain which had been kept back in previous months by the causes just men-Since that time the new crops, freights and tioned. prices have been the chief elements at work. We find that in each of these four months since June the receipts have been less than last year (which were extraordinarily large), but the decrease was least in September, when prices, especially at Chicago, had been forced up by speculation so as to draw that the farmers could bring to market. In October the decrease (43 per cent.) is much greater than in any other month, and the weekly receipts were the smallest since May, though October is usually one of the two or three months of largest grain receipts. Last year the October receipts were larger than in any previous month of any year.

The indications are that an unusually large proportion of the surplus grain was marketed this year before October, but it is probable also that the considerable decline in prices since September has somewhat discouraged shipments from the farms. There is, however, much less to ship than last year, and on the whole the movement of the coming winter will probably be much lighter than for two or three winters past. Much has been said of the large stocks on hand at the Western markets, but the total at the end of October was less than 20,000,000 bushels, and not 5,000,000 bushels more than last year, which excess would give not more than a fair week's lake and rail shipments, and two good weeks of rail shipments. The stock on hand too, is less now than at this time in If receipts were as large as usual, this stock would probably increase before navigation closes, be-cause the lake vessels are taking very little grain, and many of them are likely to be laid up for the winter before the straits close; but for some weeks past the shipments from Chicago and Milwaukee, though small, were yet larger than the receipts.

UNIFORMITY OF SIGNALS.

The communications on this subject that have recently appeared in our columns, and the fact that at the meeting of the Superintendents' Association a committee was appointed to make a report on it, indicate that railroad officers are beginning to realize as they never have before the evils of the dissimilarity in thousands of bushels, and the percentage of such of the signals now in use. The question of what form of signals to recommend is one which the committee referred to will have occas ion to consider, and all railroad managers are, or should be concerned to know which is most deserving of general adoption. With the example and the experience of English railroad manage ment, no investigation of the question would be worthy of the name which did not give a very careful consideration to the practice in that country, and the reasons which have controlled it. As was stated in a recent letter to this paper, "as the result of their experience during these past years English railroad men have universally adopted the semaphore signal as being in every way the best for its purpose."
Thousands of these signals are in use there, and it is almost impossible to get out of sight of them on any line of railroad in the kingdom. At some of the stations they may be numbered by hundreds, and trains are seldom without the protection which a sight of one of them gives.

Owing to the fact that they are so little used in this country, some railroad managers possibly have the idea that they are what may be called a new-fangled notion. Their use, though, for telegraphic purpose nearly a century old. Thus, in Johnson's Encyclo-

pedia it is said:

"The semaphore was the first really efficient telegraph. It was invented by Claude Chappé and adopted by the French government in 1794. Subsequently, under various modifications, it came into use in nearly every civilized country. It consisted of an upright post supporting a horizontal bar, which, turning upon a pivot, could be placed at various inclinations. This had two smaller arms pivoted to its extremities, and capable of being turned at various angles with them. By independent movements of the parts, the apparatus was susceptible of 98 distinct positions, and of exhibiting the same number of different signals, which could be made to represent either letters, numbers, words or sentences. The speed of transmission under the most favorable circumstances was about three signals per minute. The semaphores were placed upon high towers, usually about four or five miles apart.

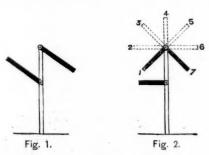
"Nicholas I., of Russia, constructed a great line of this kind from the Austrian frontier through Warsaw to St. Petersburg, which was composed of 220 stations. The semaphores were erected upon the summits of substantial and lofty towers, and the whole work cost several millions of dollars."

In Brande's Dictionary of Science it is said:

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In Brande's Dictionary of Science is as said.

"In 1803 the French erected semaphores along their whole line of coast, formed of an upright post, carrying two, or sometimes three beams of wood, each turning on its own pivot, one above the other. In 1807 Captain Pasley, of the Royal Engineers, published his polygrammatic telegraph, differing from the French semaphores by having beams turning on the same pivot; and in order to obtain a sufficent number of different signals, he proposed to erect two or three posts at each station. In 1816 Sir Home Popham considerably simplified this con-



struction. His telegraph, which was adopted in that year by the Admiralty instead of the shutter telegraph, and has continued in use ever since, consists of merely two arms, movable on different pivots in the same mast, as represented in fig. 1. It is capable of giving forty-eight independent signals.

"Lastly, in 1822, General Pasley still further simplified the construction by placing the two arms on the same axis (as shown in fig. 2), * * * * Each arm can exhibit the seven positions, 1, 2, 3, 4, 5, 6, 7, besides the position called stop, which points vertically downwards, and is hid by the post."

The use of semaphores for railroad signals is also older than probably many of our readers suppose. Thus, in the paper on "Railway Signals," read before the Institution of Civil Engineers by Mr. Rapier in 1874, the history of railroad semaphore signals is given as follows:

given as follows:

"About the year 1841, Mr. C. H. Gregory designed and erected at New Cross a semaphore signal. This was an adaptation of the old form of semaphore used for telegraphing to short distances, and has proved to be perhaps, the most important step in the development of railway signals.

"At first the lamps, with red, green and white lenses, were worked by a separate handle; but soon a pair of bevelwheels were added, so that one handle worked both the blade and the lamp; also levers connected by rods were substituted for pulleys connected by wire ropes, and counterweights were added to make the signal self-acting to the position of danger.

"The left-hand arm when in a horizontal position indicating 'danger' to an approaching train; the left-hand arm at an angle of 45°, proceed with 'caution,' and the arm altogether lowered, 'line clear,' It now appears remarkable that this great improvement in signaling was not at once that this great improvement in signaling was not at once generally adopted. The old disk signals of various sorts still continued to be erected, and the introduction of the improved semaphore signal was comparatively slow."

The last sentence sounds like prophecy of what has

The last sentence sounds like prophecy of what has occurred, or rather not occurred, in this country, since Mr. Rapier wrote his paper, and the following paragraph from Barry's book on "Railway Appliances"

ems like a bit of history of this country as well as of

"The type of fixed signals originally used in the varilways in England differed according to the ideas of engineer, and to such an extent that in some cases a swhich indicated 'all right' on one railway denoted 'dan other will are "."

In the same book the same author remarks that:

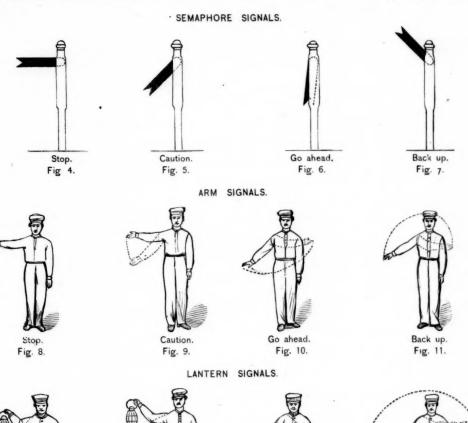
"The signal known as the semaphore signal has, however, been found so superior to all the other types, that it is rapidly superseding all the other signals, and before long it will probably be the only daylight fixed signal used in this country."

will thus be seen that the present semaphore ha resulted from a process of development. The forms of it which have been described were found to be the best suited for conveying messages by signs before the days of electric telegraphs; and, quite naturally, it was the condition of the track and whether they could go on, stop or proceed with caution.

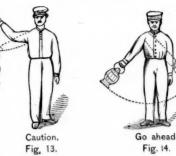
arm, we may have a system in which the three methods of giving signals will all be in accordance with each other. Such a system is represented by figs. 4 to 15.

Thus the semaphore arm extended, as in fig. 4, neans almost universally "stop." A similar posimeans almost universally tion of the signal-man, shown in fig. 8, may mean the same thing. At night this position must be in-dicated by a movement of a lantern. This may be done by raising and lowering it vertically (fig. 12) as great a distance as is possible by the motion of the arm. This would indicate that the semaphore was raised to danger.

The position of the semaphore to mean "caution" is at an angle of 45°, as shown in fig. 5. This can be afterward employed to communicate instructions to indicated by the arm by raising and lowering it a short the men in charge of trains and thus indicate to them distance, as in fig 9, and by a lantern by a similar the condition of the track and whether they could go movement, as in fig. 13. It may be said that the lantern signal "stop," fig. 12, may be confused with the In a previous article (see *Railroad Gazette* of Dec. "caution" signal, fig. 13. It should be said, though,



Stop. Fig. 12.



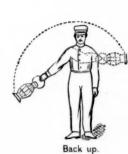


Fig. 15.

natural gesture which we all use to detain or arrest the attention of another is to extend the arm, as shown in the following fig. 3. It is a natural move-



ment which we all use if a person is about leaving a room and we want to stop him. On the stage actors use it when they say "stay," and thus unconsciously same as the corresponding positions of a semaphore tions are employed in each case.

17, 1880), attention was called to the fact that the that these figures do not show as distinctly as they should the difference in the movement of the lantern in the two cases, and there was not time to engrave If the light in fig. 12 is raised and low new ones. energetically as great a distance as is possible with the arm, or about 5 feet, it is thought there would be no danger of confusing it with a gentle movement of a few inches, as indicated in fig. 13.

The "go ahead" signal is indicated by lowering the semaphore down so as to be nearly or quite hidden by the post, as shown in fig. 6. This position is very well indicated by moving the arm downward, from an ex-tended position, so as to describe a semicircle, as in The same signal may be given by a lantern in the same way as in fig. 14.

A signal to back up is seldom or never given by a semaphore. If, however, it was needed, it could readily be given by raising the arm either vertically or at an angle of 45°, as indicated in fig. 7. The movement of the arm as shown in fig. 11, upward in a semicircle from a horizontal position, would indicate the convert themselves into natural semaphores. By a raising of the semaphore, and the swinging of a lantern very singular anomal", however, of which there in the same way as in fig. 15 would do the same thing, are so many in signal systems, in the English code this attitude means "all right," or four most important signals in these three different code this attitude means "all right," or four most important signals in these three different "go on," just the reverse of the meaning which a semaphore arm has in the same position. If the position of the signal-man's arm is made to imply the forgotten than they are when unlike attitudes or mo-

Atlantic Grain Receipts and Exports.

The receipts of grain at the seven Atlantic ports for the month of October and the ten months then ending for five successive years have been:

Oct. 29,475,109 31,899,417 40,428,143 36,194,528 20,426,172 n .134,038,123 214,250,515 244,986,672 259,756,819 199,362,187

The receipts for the ten months are smaller than in any previous year since 1877, and 231/4 per cent, less than last year, and the October receipts are the smallest for the five years, 431/2 per cent. less than last year, and 21 per cent. less than in 1877 even. They are, bowever, a trifle larger than the receipts in October, 1876, when we had an unusually light harvest and the grain movement for the whole crop year was 145,000, 000 bushels less than last year.

There was a decrease in October at every Atlantic po:t except Boston, but it was largest proportionally at New Orleans, Philadelphia and Baltimore, as will be seen by the following table of the percentage of the totalreceived at each during the month this year and last:

Mont-real. del 10.5 6.5 New York. ..55.3 .. 53.2 Port-land. 0.3 0.2 ton. 13.3 6.1 7.5 11.7 14.4 15.2

New York and Boston together received 68.6 per cent. of the whole this year, against 59.3 last year in October; Philadelphia and Baltimore 19.2 per cent this year against 29.6 last.

For the ten months ending with October the percentage of the total received at each port for six successive years has been:

	1876.	1877.	1878.	1879.	1880.	1881
New York	 . 42.8	46.2	50.4	45.8	46.9	48.7
Boston	 . 7.8	8.6	7.3	7.2	7.7	9.7
Portland		0.7	0.7	0.5	0.8	0.7
Montreal	 . 8.2	8.8	5.8	5.5	5.9	5.4
Philadelphia	 . 19.1	13.4	15,5	16.4	14.9	10.9
Baltimore		17.6	16.0	20.6	17.2	16.8
New Orleans	 3.5	4.7	4.3	4.0	6.6	7.8
	-	***			-	

...100.0 100.0 100.0 100.0 100.0 100.0 New York's percentage is larger than in any other of the six years except 1878; Boston's larger than ever before; Montreal's and Philadelphia's the smallest for the six years; Baltimore's smaller than before except in 1878 and nearly the same as then; New Orleans' percentage the largest for six years, though it

has been unusually small for some months past.

Comparing New York's percentages with those of
Philadelphia and Baltimore together we have:

a mineracalpanter centre avente.		a-B			
New York 1876.	1877. 46.2	1878. 50.4	1879. 45.8	1880. 46.9	1881. 48.7
Phila. and Balt36.3	31.0	31.5	37.0	32.1	27.7
The three 79.1	77.3	81.9	82.8	79.0	76.4

Thus the two latter markets, which in 1876 received but about one-seventh less than New York, this year received three-sevenths less, and a much smaller proportion of the whole than in any other year of the

Comparing New York and Boston together with Philadelphia and Baltimore we have:

1876.	1877.	1878.	1879.	1880.	1881.
New York and Bos- ton	54.8	57.7	53.0	54.6	58.4
Phila, and Balt36.3	31.0	31.5	37.0	32.1	27.7
	07.0	00.0	00.0	0.0.0	00.1

The four...... 86.9 85.8 89.2 90.0 86.7 86.1 The two northern ports this year have received more than twice as much as the two southern ones, and a larger proportion of the whole than in any other year of the six-a proportion which is at this time increasing, as is shown by their October receipts, when New York and Boston received three and a half times as much as the other two cities, which have been their chief rivals.

The receipts of grain and flour (reduced to bushels) at the four Eastern ports during the first 10 months of the year, down to Oct. 28, have been, this year and

retion .				
	1881.	1880.	Inc. or Dec.	P. c.
New York	113,827,738	134,025,664	Dec.,20,197,926	15.1
Boston	32,121.244	27,193,135	Inc 4,928,109	18.1
Phila lelphia		38,852,772	Dec. 13,454,018	34.6
Baltimore		45,688,973	Dec., 7,338,941	16.1
			-	**

Total......209,697,768 245,760,544 Dec..36,062,776 14.7

Boston's large increase of nearly 5,000,000 bushels is remarkable in a year when at the other three ports there was an aggregate decrease of 41,500,000 bushels. The smallest percentage of decrease is at New York, but Baltimore's is not much greater: Philadelphia's is more than twice as large.

New York gained a trifle (26,203 barrels, or 0.6 per cent.) in flour receipts, and the other places gained more—Boston 419,483 barrels (24.4 per cent.), Philadel-phia 122,157 (19.4 per cent.), and Baltimore 166,100 (33.3 per cent.) We have shown below that the increase in flour exports was wholly at New York and Boston. This year 52.5 per cent, of the flour receipts ere at New York, 28.6 at Boston, 10.0 at Philadelphia, and 8, 9 per cent, at Baltimore,

The percentage of the total grain and flour received at each of the four ports in each of these years has

The changes of New York and Baltimore'aer trifling, and thegreat gain of Boston is nearly balanced by the great loss of Philadelphia.

Exports of flour, wheat and corn (all other grain exports are insignificant) from these four Eastern ports

New York	14,308,904 15,340,390	1880. 113,352,240 16,768,379 25,003,123 41,821,337	Decrease. 31.055,457 2,459,475 9,662,733 10,240,638	P. c. 26.5 14.7 38.6 24.5
Tctal	143,526,776	196 945,079	53,418,303	27.1

The decrease in exports has been greater than that in receipts everywhere except at Philadelphia. It is noticeable that while the flour receipts at Philadelphia were 19.4 per cent. and those at Baltimore 33.3 per cent. greater than last year, their flour exports were 21.3 and 8.4 per cent. less, respectively. The chief decrease in exports was in corn, amounting to about 28,000,000 bushels; while in wheat there was a decrease of 28,800,000 bushels, with an increase in flour equivalent to 3,450,000 bushels.

The percentage of the total exported from each pool

The changes are not so great in the exports as in the receipts; Boston gains but 1.5 in its percentage of exports against its gain of 4.2 in receipts: and Philadelphia, losing 8.7 in receipts, has lost but 2 in exports. The changes, considering the different distribution of the crops and the railroad war, are not specially sig-

The Fontaine Locomotive-Erratum.

It is to be regretted that a very confusing error occurred in the article on the "Fontaine Fallacy," published last week. The last clause of the sixth paragraph in the first column on page 617 reads: "for the reason that by the former the power is exerted at the top of the lower wheel and acts practically on lever $a\ b\ c$, whose fulcrum is at c and load at b, midway between the fulcrum and power." The letters way between the fulcrum and power." a b c should have been c d e, and e should be substituted for c and d for b.

Foreign Railroad Notes.

There has been some discussion in Vienna recently concerning the best office hours for the employés in the railroad offices, by which it appears that at present the clerks begin work at 8 in the morning and are dismissed at 2 in the after noon, which seems to an American an extraordinarily early hour. Clerks here are glad to get away at 5, and though they may not go to work till 9 and take half an hour for lunch they still give considerably more time to their work than the Austrians do. A place where one could go home after the afternoon would be looked upon as a very "soft by men in this country, from the principal officers two in the afternoon down.

It is reported from Hungary that the administration i determined to continue its policy of extending the state railroad system, in order gradually to enable the government to exercise greater influence for a system of rates serving its interests, and secure it beyond question. The policy seems to be to make Buda-Pesth the great traffic centre of Hungary, and to command all the export routes. Lines to the north, east, southeast, south and southwest have already been secured, and the next step is to get one to the west, from Buda-Pesth to Vienna, and plans have been made for

In Prussia, since last year, a beginning has been made on no less than 28 "secondary" railroads, whose aggre-gate length will be 888 miles; some of them are well under way and some completed. Most of them are short, but one or two are as much as 75 miles long. They are all built by or with the aid of the government. More lines of the kind are contemplated.

The Prussian government railroads have reduced the time allowed for loading and unloading cars, when the work is done by the shipper, from 12 to 6 hours. If this rule could be enforced in this country, we would have few if any blockades, and could get along with about a hundred thousand fewer cars. There is great complaint in Prussia of the reduction in the time allowed, and it is mentioned that in certain places where private railroads compete with them the state railroads still allow twelve hours.

The official journal of the German Empire, commenting n a report that at the government brake trials in Septem er near Berlin the Westingho ise brake was victorious says that these trials were preliminary trials only, chiefly to determine which brakes should be admitted to the long, practical tests on regular trains between Berlin and Breslau. It is the result of the latter trial which will determin

In the month of August last the German Imperial Railroad Bureau reports that there were in the Empire (exclud-ing Bavaria, which does not report) six derailments of trains and two collisions "on the open road" (between stations), and 13 derailments and 19 collisions at stations, and 187 other accidents (running over vehicles, fires in trains, boiler explosions and other accidents in operation causing death or injury to persons. By these accidents 145 persons

were injured, and considerable damage was done to 48 trains and slight damage to 79. Out of 18,141,959 passengers one was killed and four were injured; but 13 employes were killed and 57 injured in railroad operation proper, and 8 killed and 25 injured in work connected with it. There were also three post-office, revenue and other officials killed and 4 injured, and 12 other persons were killed and 10 injured,

Record of New Railroad Construction.

This number of the Railroad Gazette contains information of the laying of track on new railroads as follow

Allegheny Central.-Completed from Olean, N. Y., northast to Friendship, 20 miles. Gauge, 3 ft.

Chesapeake & Ohio.—This company's Elizabeth, Lexington

& Big Sandy line is extended from the Licking River eastward to Herat, Ky., 47 miles.

Chicago, Milwauket & St. Paul. - The Southern Minnesota Division is extended from Dell Rapids, Dak., south to Sioux Falls, 19 miles.

Chicago & Northwestern .- Track laid on the Callione Branch from Eagle Grove, Ia., west 22 miles.

Denver & Rio Grande.—The San Luis Valley Branch is

completed from Mears, Col., south to Villa Grove, 19 miles. The Blue River Branch is extended from Robinson northeast to Wheeler's, 9 miles. The Eagle River Branch is ex-

tended from Mitchell to Eagle Park, 7 miles. Gauge, 3 ft.

Denver, South Park & Pacific.—The Fuirplay Branch is
completed from Garo, Col., to Fairplay, 10 miles. Gauge, 3 ft

County.-Extended from Fairview, Ill., to London

Mills, 11 miles. Gauge, 3 ft.

Minneapolis & St. Louis.—Extended southward to Ogden,

Montpelier & White River .- Extended from Barre June

tion, Vt., to Montpelier, 2 miles.

Morgan's Louisiana & Texas.—The North Branch is extended from Holmesville, La., north to Cheneyville, 8 miles.

Old Colony.—A branch has been completed from the

Northern Division in Taunton, Mass., to the Whittenton Mills, 11/2 miles.

Pittsburgh, Bradford & Buffalo.—The Northern Branch extended from Arthur's, Pa., to Tylersburg, 9 miles. Gauge, 3 ft.

Utah Northern.-Extended from orthward to Silver Bow Junction, 31 miles. Gauge, 3 ft.

This is a total of 2441/8 miles of new railroad, making 6,008 miles this year, against 4,946 miles reported at the corresponding time in 1880, 2,987 miles in 1879, 1,777 miles in 1878, 1,867 miles in 1877, 1,931 miles in 1876, 1,128 miles in 1875, 1,594 miles in 1874, 3,288 miles in 1878 and 5,982

CHICAGO RAIL SHIPMENTS EASTWARD increased a little in the last week in October, when they were 62,295 tons, against 56,304 the previous week and 56,995 the week before that. The last of these weeks (ending Oct. 29) was that in which the roads advanced their rates, the Pennsylvania's rates being higher than that of the other roads. It does not appear from the shipments that it suffered from its higher rates, but it is not probable that the shipments were all by the advanced rates, by any means.

The total shipments from Chicago and the percentage by ach road in the month of September and in each Octob

8						
	Percentages.	Sept.	Oct. 8.	Oct. 15.	Oct. 22.	Oct. 29.
_	Chic. & G. T	8.4	0.0	9.4	7.6	6.1
e	Mich, Cen	25.4	26.8	30 2	27.8	26.7
7	Lake Shore	30.5	27.8	24.4	28 4	30.1
y	Fort Wayne	18.0	188	17.5	19.6	143
	P., C. & St. L	9.9	13.0	13.6	11.1	12.5
r	Balt. & Ohio		4.6	4.9	5.5	6.3
	Total	100.0	100.0	100.0	100 0	100.0
	Total tons	264,994	60,578	56,995	56.304	62,295

The two Pennsylvania roads thus had nearly the same percentage in the last week reported as in the two weeks previous, and a larger one than in September. For the four weeks of October (which excludes two week days of the month), the Chicago shipments were thus 236,172 tons, and the average shipments per day were 9,840% tons, against

For the week ending Nov. 5 the Chicago Board of Trade reports the shipments to have been 45,793 tons, and 854 tons less than it reported the week before, when the total tons less than it reported the week before, when the total actual slipments were 62,295 tons. By its report for last week the percentage by each route was: Chicago & Grand Trunk, 9.1; Michigan Central, 24.9; Lake Shore, 31.8; Fort Wayne, 16.3; Pan-handle, 14.7; Baltimore & Ohio, 4.4. These percentages may be materially changed in the official report.

The total shipments from Chicago from Jan. 1 to Oct. 29 were 2,403,655 tons, and from June 15 to Oct. 29 they were 1,199,509 tons, and the percentage by each road for the ten months ending Oct. 29 and also for the four and a half mouths of the railroad war have been:

C. & G.T.	Mich. Cen.	Lake Shore.	Fort Wayne,	P.,C.	B. &
Jan. 1 to Oct. 2910.4 June 15 to Oct. 2910.6	25.8 26.4	$25.0 \\ 26.6$	21.1 19.9	11.4 10.6	6.3 5.9

It is remarkable that there have been no greater changes in the percentages during the long railroad war, rates hav-ing been not only very low, but very irregular. The amount carried in the last 41/2 months is nearly the same as in the first 5% of the year, and the average weekly shipments, which were 51,086 tons down to June 15, have been 61,285 since that time. The shipments for the ten months this year are 94,015 tons more than these for the whole year 1880, and

Chicago increased largely, and during November they averaged more than 50,000 tons a week, while in September they averaged only 35,000 tons. It is not probable that the winter shipments this year will be larger than last year even if the rates remain much lower.

THE NEW YORK CENTRAL FAST TRAIN was put on Monday, with the same leaving and arriving time as the Pennsylvania, and of similar make-up; that is, composed wholly of parlor and sleeping cars. It also runs through with very few stops, and an extra charge for a through berth of \$8 is made to every passenger, as on the Pennsylvania. But the net regular fare being \$9.25 by the New York Central, instead of \$14 on the Pennsylvania, the former is the cheapest by \$4.75. The train west-ward starts from New York at 8 a. m., reaches Albany at 11:35, Rochester at 5:15 p. m., Buffalo at 7 Cleveland at 11:35, Rochester at 5:15 p. m., Buttato at 7. Cleveland at 11:32, Toledo at 2:23 a. m., and Chicago at 9:40. The average speed per hour on the New York Central is 40 miles exactly; on the Lake Shore, 35 miles. The eastward train leaves Chicago at 3:30 p. m., like the old fast train, and reaches New York at 6:30 p. m., instead of 10 m., as heretofore

The distance run by this train is not 980 miles, as is er roneously stated, but only 966 miles. The error is in taking the distance by the Michigan Division between Elkhart and Toledo, and the Monroeville line between Toledo and Cleve land, instead of the Air Line Division and the Sandusky Division respectively. The former was at one time the only line, and the through distance in the guide time-tables as always given by it still is 539 miles from Buffalo to Chicago. But by the Air Line Division 9 miles is saved, and by the Sandusky Division 4 miles, and it is by these that the fast train runs.

Some complaint is made because there is a fast train by the Lake Shore and none by the Michigan Central. But evider tly there must be some limitation of the routes west of Buffalo for which the New York Central shall haul cars in It is an exceptionally costly train, and prob ably will have but a limited patronage; and if but one route has it, it should be that with the most important cities on the line and the most important railroad connections, and without doubt the Lake Shore is that route. By it a St. Louis connection is secured, the Wabash purting on a train that connects with the fast train at Toledo, and makes the distance from St. Louis to New York in 33½ hours. It is, however, the first time, we believe, that the Michigan Central has not matched anything in the way of train accommodations that its competitors have offered, and as it has a 3.30 fast train out of Chicago, which reaches New York 3½ hours later than the Lake Shore and the Pennsylvania trains leaving at the same hour, there may be an opportunity to see to what extent the public values these hours.

THE COTTON MOVEMENT during the first two months of the crop-year (September and October) is reported by the Commercial and Financial Chronicle as follows: The total

West-bound:

1878. 1879. 188 shipped to the seaboard or to manufactories has quantity simpled to the seasonal of the maintain orders as been 1,419,941 bales this year, against 1,554,064 last, a decrease of 134,123 bales, or 8.6 per cent. The average weight of bales was also a little lighter this year. The most notable feature in the movement this year is an increase in what is called the overland movement-the shipments direct by rail to the Northern factories or ports north of the Potomac. These were 200,393 bales this year, against 148,796 last, showing an increase of 51,597 bales, or 34% per cent. This includes the shipments by way of St. Louis and those that cross the Ohio at Cairo, Louisville, Cincinnati, etc. The St. Louis shipments were much less in 1880 than in 1879, when the yellow fever at Memphis increased them; but this year they showed only a small increase over last year (from 58,028 to 62,158 bales, or 7 per cent.); but there is a large increase at Cairo (150 per cent.), and also at Louisville (60 per cent.) and at Cincinnati (100 per cent.). This overland movement, necessitating long rail hauls, was 14½ per cent.
of the total shipped this year, against 8¾ last year.
Of the seaboard receipts this year, 24.2 per cent, were at

New Orleans, 20.1 at Savannah, 14.3 at Charleston, 12.7 at Norfolk and 12.1 at Galveston.

The exports for the two months were 582,422 bales this

ar, against 721,552 last, a decrease of 139,030 bales, or 19.3 per cent.

The stocks on hand Nov. 1 were larger this year than last, and the decrease in the amounts sent to ma from the plantations is less than is indicated by figures for the shipments above, because since cares that 1,609,941 bales of the last crop were marketed in cates that 1,609,941 bates of the last crop were marketed in the two months, against 1,706,064 last year, a decrease of 55% per cent. This does not indicate so great a decrease in the yield as has been reported, but of course two months business is not conclusive on that point. Last year rather more than one-fourth of the crop was marketed in these two

THE MISSISSIPPI RIVER GRAIN SHIPMENTS have nearly ceased since August. They were greatly reduced as soon as the rail rates were reduced to 15 cents, but in July and

only 68,083 tons less than for the whole year 1879. No complaint can be made of the insufficiency of the traffic.

After the middle of October last year, rail shipments from Chicago increased largely, and during November they averlaw a less grain to ship by any route. The total shipments of grain by the Mississippi in each of

May and June	Bushels.
may and June	T. T
July and August	1,490.435
september and October	279,830

In the last three weeks the shipments were 5,591 bushels. We have no record of the shipments last year in the cor-esponding periods, but the New Orleans receipts, which are a pretty good gauge of the river shipments, were, in bushels

. 430,029 3,337,005 In the three periods the receipts of St. Louis compare as

Tollows this year and last.			
1881.	1880.	Inc	
May and June8,955,215	6,643,983	I.	2,311,233
July and August 8,368,941	10,905,560	D.	2,536,619
September and October5,825,805	7,672,693	D.	1,846,88

No judgment can be formed as to the normal course of shipments down the Mississippi by the results of the past four months. They do iudicate, however, that when the rates are as low as 15 cents per 100 lbs. from Chicago to New York the Mississippi route cannot compete with it. did compete very effectively, however, when the rate wa It cents. At what point the river route will cease to divert grain for export remains to be shown by further experi-

THE TRUNK LINE TRAFFIC OF THE EASTERN CITIES has recently been reported by Commissioner Fink to the com-panies in the Jcint Executive Committee, and the figures are of very great importance as a key to the distribution the traffic of the country.

The total shipments westward, and the percentage from each of the four great cities have been for the last three years and the last eight months of this year as follows:

y curs and the mot eight in	Percentage from					
Year. Tons.	N. Y.	Boston.		Baltimore.		
18781.274.858	58	16	15	10		
1879 1,539,923	54	16	16	13		
1880 1.871,480	55	16	16	13		
8 mos. to Sept. 1,						
18811,297,563	56	19	13	11		

This year New York bas a larger percentage than in 1879 or 1880, but less than in 1878. Boston has gained largely this year, and Philadelphia and Baltimore have lost. New York, it appears, ships considerably more than the other

three cities together.

The east-bound shipments to these four cities in 1878 and in the two years ending with July, 1880 and 1881, were as

1		Percentage to-				
	Year. Tons.	N. Y.	Boston.	Phila.	Baltimore.	
,	18787,318,000	42	22	18	18	
•	1878 7,318,000 1875-80 8,9 4,000	43	19	. 18	19	
,	1880-818,973,000	44	23	16	16	

New York has advanced one per cent. yearly, at the expense of Philadelphia and Baltimore. The percentages of New York and Boston together compared with those of

West-bound: New York and Boston Phila, and Galtimore		1879. 70 29	1880. 71 29	1881. 75 24
East-bound: New York and Boston Phila. and Bal imore	1878. 64 36	1879-4 62 37		1880-81. 67 32

It appears that the west-bound shipments have increased faster than the east-bound, but are still but a small fraction of them in quantity. In 1878 there were 5.74 tons of freight from the West to these cities to one from these cities to the West. In 1879 the proportion was 5,82 to 1, in 1880

IMMIGRATION BY WAY OF NEW ORLEANS TO THE NORTH WEST IS PROPOSED.—At the session of the Western Trunk Lines Association, Oct. 26, it voted, in reply to an inquiry from the Chicago, St. Louis & New Orleans Railroad, tha its lines would accept the same proportions on emigrants by way of New Orleans as on those coming by way of New York. The New Orleans road proposed to make a rate of about \$9.50 to St. Louis, and said that the New Orleans steamers would take the emigrants to New Orleans at a rate very little higher than that to New York. The distance and time to New Orleans are about one-half greater than to New York, and the lengthening of the sea voyage will be a great objection to the route. But the rail journey from New Orleans to St. Louis is shorter than that from New York—700 miles against 1,062. To Chicago the distance is substantially the same from both seaports. One would suppose that if a the same from both seaports. One would suppossiderable immigration could be attracted One would suppose that if leans the river steamboats would be able to com-mand it better than the railroads, as they could give the immigrants more room and places to skep, the lack of which makes the rail journey very wearisome, coming as it does after the exhaustion of a voyage in the steerage of a steamship. But the length of the ocean passage will pre-vent, we imagine, any large immigration by this route, unless it is to Louisinna and Texas, and these states receive comparatively a very small number of immigrants.

BUFFALO CANAL GRAIN SHIPMENTS, which have go ally been very small since the low rail rates were made last June, have increased materially recently, and in the last week reported (enoing Nov. 4) were 1,742,900 bushels, which is $2\frac{1}{2}$ times the rail shipments of the same week, 60August were much larger than they have been since. The chief unfavorable cause in this latter period has been the very bad harvest in the country near St. Louis.

We may divide the six month's since navigation opened into three equal periods, the first, May and June, in which the most formidable competition was by the lakes and the Erie level times the rail shipments of the same week, 6, which is $2\frac{1}{2}$ times the rail shipments of the same week, 6, per cent. more than the canal shipments in the corresponding week of last year, 70 per cent. more than the week before, larger than in any other week since the low rail rates were made, and larger even than the average weekly shipments this year before those low rates were made, and this

in spite of exceptionally light lake receipts at Buffalo. The capal has profited by the inability of the railroads to provide for all the traffic offering, but the lake vessels have not. The canal rates are probably remunerative now, though less than is usual at this time of year. The boats will probably be fully employed now until the canal is closed, which will probably be about three weeks from this date.

ELECTRIC LIGHTING OF CARS has been tried in Eng-A single Pullman car in a train between London and Brighton was fitted with no less than twelve incandescent lamps, to which electricity was supplied by a Faure accu-mulator with 32 cells, charged before starting. On the down trip by daylight the electricity was switched on be-fore passing through tunnels, and on the return journey at-night the car was kept lighted by the electric lamps. The instantaneous lighting of all the lamps by a single movement is of great advantage for tunnel lighting. No information is given as to the cost of the light, which will probably be the chief obstacle to its general introduction.

PETROLEUM EXPORTS continue wonderfully large. For the ten months ending with October they were 409,825,825 gallons, which is no less than 40 per cent. more than last year and 21 per cent. more than in 1879, when they were larger than ever before. This year 74.1 per cent of the exports was trom New York, against 79.6 per cent. last year; 196 per cent. was from Philadelphia, against 17.4 last year, and 3.9 per cent. from Baltimore, against 4.8 per cent. last

Railroad Signals.

The following notes from an experienced general manager are of the kind that will help materially in arriving at the best uniform system. The discussion of this question is now the order of the day, and we hope that it will be thorough. We present below this communication some rules and principles that have been formulated by foreign authorities, and will have some further material from the same sources:

HAND AND LANTERN SIGNALS.
"I baven't time to write you an article for publication, but wish you to have a few points on railroad signals which came to my mind in reading the article of E. A. Hill in your paper of the 21st. Taking up the three principal signals, viz: 'stop,' 'go shead' and 'back up,' I wish to say that Class C, as designated in Mr. Hill's table, has, I think, most excellent reasons for adoption. And first, a lamp swung across the track is the most natural thing to do in case of danger. An outsider, if wishing to stop a train, knowing of danger, would give this signal; second, it can be given with vigor and energy without putting out the light; third, it covers a greater range of vision than any other signal. To use an up-and-down movement you are liable to put out your light. You are also liable not to do it within the range of These seem to be signal.

"To go ahead. The swing over head is a wide-spread sig-

"To go ahead. The swing over head is a wide-spread sig-nal, easily seen, no danger of putting out the light, and the natural motion that all is right.
"To back up." Here you want, first, a distinct movement, not easily misunderstood, and one specially adapted to con-veying the idea of quantity. The motion up and down gives you both of these, as you move your lantern either through a long or short distance as circumstances require, giving at once to the engineer an idea of the distance, and the colvonce to the engineer an idea of the distance, and the idea he can get, as in most cases he is governed entirely by signals and cannot by any other means form an opinion. The backing of an engine or train is always attended with more or less danger, and requires the greatest care. In deciding upon signals for use on several roads I have had occasion to carefully consider this question, and without preju-dice toward any the foregoing resears have seemed to re-

To conclude. There is great and increasing necessity for uniformity of signals. The great army of railroad men are continually changing localities. Men are trying to better themselves, and in hiring new men from other roads you are constantly in danger of having wrong signals used, owing to their being brought up to the use of different signals, whereas if all roads used the same signals this danger

THE VISIBILITY OF DISTANT OBJECTS.

ar the end of the last century (about 1791), the Brothers Chappe, who, we believe, were inmates of a monastery, constructed an optical telegraph, for communicating mes-sages by signals; and preliminary to fixing upon the apparatus sages oy signals; and preliminary to fixing upon the apparatus they made elaborate experiments as to the distance at which different forms, sizes, magnitudes and colors could be seen under different circumstances. The principles which they formulated concerning the visibility of bodies at a distance are quoted by Baron von Weber in his work on "Railroad Signals" published in 1867, as remaining the best exposition of the subject that he generated. of the subject that has ever appeared. They are quoted by Weber as follow

The principal results of these investigations, which are of great importance in the optical signals of railroads, and yet are so little known and seldom observed by experts, that many absurdly constructed systems of railroad signals have arisen, are briefly as follows : *

"a. The visibility of an illuminated body decreases directly in ratio to the square root of its illumination and

its surface, b. The same surface, in an elongated form, is visible at greater distance than if round or square.
"c. All the colors of an illuminated body disappear under

* Moigno (l'abbé) Trentise on Electric Telegraphy, pages 8 and 9 eschlar, Treatise on the Operation of Railroads, I 100

certain conditions of illumination; the form of the signal is

rerefore alone available in telegraphy, not the color.*
"d. All signals should have the sky for a background.
"e. Projections, even of very small dimensions, on narro

objects, are recognizable as long as the latter rectiline

"f. In an average condition of the atmosphere, and with a y sky, a body 6 ft. long and 1 ft. broad, outlined at the horizon, is visible to the naked eye at a distance of one myriameter (61/2 miles).

en the visibility of a white flame equals 1, that of a red flame of equal intensity equals 1, of a green 1, of a

Lights of similar color run together into one image when the distance between them is not greater than 1000 of the range of vision

"i. Lights of different colors, particularly when th are complementary, are distinguishable at any distance within which the color with the least illuminating power is

"k, White light alone should never be used for signaling great distances, as in certain conditions of the atmosphere hay appear red, orange or green.

"l. The movement of a light at night is invisible unle is a stationary light near it.

'It is natural that systems of signaling, founded on the observations, should, for day service, assume the form of semaphore telegraphs, showing at night colored constellaume the form of tions on a dark background.'

THE GOOD AND THE EVIL SPIRIT OF THE RAILROAD.

In 1867 the late Baron von Weber published a work on Railroad Signals and Telegraphing, which opens as fol-

lows:
"Not alone had Socrates his good spirit and his evil spirit. A good and an evil spirit walk by the side of every man, even with every phenomenon in civilized life which is iliar enough to be individualized are associated forces which are known as its good and evil, its helping and hindering, principles. Scarcely had the mighty figure of the youthful railroad entered the domain of civilized peoples, when there appeared the white and the black spirit, which offer it their services; the first hastens, as a swifter mes-senger, in advance of the swift one, lights its path with the flash of the word, and hovers bodiless over the heavy iron body of the young giant; the other trickishly flings around his wings the invisible snares of long-drawn routine, snares his flying foot in the thorny bushes of written flourishes. him astray in the labyrinth of regulations and books of rules, and bends and lops his mighty limbs in order to press him upon the Procrustean bed of obsolete forms sed these spirits already? The shining Who has not gues daughter of the lightning and of thought, the telegraph and the son of Father Custom and Mother Iuk, narrow-breasted, bureaucratic routine. These are the eudæmon and the kakodæmon, the good and evil spirits of railroading.

"Railroading on the European continent was rocked in its cradle by both spirits; and therefore we can scarcely imagine any form of its life, really suited to its nature, which should give less range and power for the working of the dark spirit. We have therefore to commit to the Nation of the Future, which is fortunate enough not to be compelled to hold ready the inherited implements of torture for every new creation of the mind, but can write with bold hand on an unblotted page the great features of its civilization; which begins with that with which we end; we must, in a word, leave it to the Americans to find the solution of the difficult problem of a truly practical railroad management; but wish for a moment to forget the dark spirit of the railroad world, and busy ourselves only with its lighter com

THE FUNDAMENTAL PRINCIPLES OF SIGNALING.

From Dr. E. Schmitt's enormous volume on "Signals" (786 large actavo pages), forming the eleventh part of Winkler's collection of "Lectures on Railroad Construction," we translate the following

"In the general application of signals the following rules should be observed :

"1. Every train is a moving danger.

"2. A locomotive alone must be treated as a train; generally in signaling, the expression "train" should be applied to every movement of railroad rolling stock on the wrack when accomplished by steam-power.

3. The stations mark in signaling only certain sections of the open road or track, but they do not interrupt it, so that the station employés are to be regarded as track employés also,+ and in receiving or transmitting signals have the same functions to perform as the latter.

[" Signaling Directions of the Austrian Railroads, § 12.-"The depot employés must regard themselves as track employés also and must therefore follow carefully the signaling regulations prescribed for the track employés."]
"4. On the line, all regulations, including of course th

signaling arrangements, should be planned as though a train were always expected. This principle is observed throughout on the French, Belgian and English lines; on the major ity of the German lines, on the other hand, a signal is sent on in advance of the morning train, so as to herald its com-

ing and call the attention of the officials to the fact of its For this reason the concentration of signals, or intrusting approach. It will be explained hereafter that this latter method is far less safe and therefore less practical; indeed, it is already capable of demonstration that the reliability of this method depends on the fact of every active official understanding that a train is approaching from the signal that hurriedly precedes it. This is not always to be de-

5. The meaning that the signals are intended to convey should be as simple as possible; the number of these idea should be the fewest practicable, and the whole system of signaling should altogether be as simple as possible. Though uence of the small number perhaps here and there, in consequence of the small number of ideas that can be signaled and their simplicity, the com munication suffers in completeness, the advantage that is secured in a greater clearness and reliability in working is on the other hand so important, that the before mentioned slight disadvantage is hardly to be taken into consider-

"In the earliest systems of signaling, the great mistake prevailed, that in the interests of security the practice was followed of informing the whole of the operating officials of the time of every arrival and departure and generally of every occurrence, whereby the number and variety of signal expressions became uncommonly great, and in consequence the system of signaling very uncertain. In a properly arranged system of signaling, the object to be aimed at is much rather the establishment of intelligent communication, as reliable, rapid and complete as possible, between the terminal points of different sections of the road, whether they consist of depots or of signal stations estab-lished expressly for this purpose. When, for instance, two consecutive stations are capable of understanding from such communications what is going on between them, for that di-vision of the road the employés will require only a small number of signals to obtain information of whatever may

"Although the above described mistake is no longer ily committed, yet it cannot be denied that many of the codes of signals at present prevailing in Germany are still much too complicated. The safety of the operation of a railroad is not alone to be sought in the system of signalrain rain a love all in the watchfulness and trustworthiness of the entire force of employés. On these a too diffuse and complicated system of signaling will have an injurious rather than an advantageous effect; their attention commantly relaxes more and more. Instead of giving a matter personal attention, it is often thought sufficient to rely on the intermediation of the signals. Th are signaling codes containing over 80 signals. What official can, under such circumstances, claim that he is capa-ble of so immediately recognizing the meaning of each signal as to be able to act at once in accordance with it? There are Railroads, which have recognized but 22 signals; on these roads, the traffic, in the instance quoted certainly moderate, is managed with as great security as on other lines.

"Simplicity in the signaling is to be recommended, espec-

ially on roads where the traffic is light and in neighborhoods where railroads are newly introduced. A complicated system of signaling requires especially a staff of officials well trained in the service, who must first be educated; this training is not as a rule accomplished quicker, often not as quickly, as the traffic on the road increases. Complicated signals in unskillful hands are a very dangerous thing. In addition, the apparatus for such service costs a great deal: m a road with light traffic can be expected to much more expend,

"By its great simplicity, without taking into consideration their enormous traffic, the system of signaling in vogue ation their shormous branch, the system of signating in Vogue in England & distinguished, chiefly because the working arrangements are mostly very simple, and the signaling and switching duties are, as a rule, combined; but even the latter is only generally possible in conjunction with the entire system of operation pursued in England and the incomparable skill with which the service is performed.

"6. The signs expressed by the signals, or what is the ame thing, the form of the signals, should be so arranged that the least demand possible is made on the memory and judgment of the transmitter as well as the receiver. This is advisable in consideration of the low degree of intelligence ssed by many of the persons who have to attend to the giving and receiving of signals. In the same manner, in establishing a system of signals, the relation of good, plain and generally applicable principles should be made a con-dition. Only clear, simple directions, established on a cor-rect and thoroughly considered basis, will answer the requirements of safety; for in the first case, only under such circumstances will the employés become acquainted with them quickly and without difficulty and retain them with facility; but in addition every rule will appear to be founded on reason and not caprice, and they will therefore be more readily recognized and obeyed.

" 7. In all signals similar appearances should express simi

lar ideas. al signals and such as express a very danger should have the most easily recognizable form that

can be produced by the apparatus employed.

"9. The signals should be so constructed that at the place from which they are made it will be possible to asce that they have been transmitted correctly at their destina-tion. This, especially at important and dangerous points, is an unconditional requirement in a proper arrangement of signal

"10. Signaling should be so arranged that the signals are given by the least possible number of persons, i. e., that the responsibility may rest on the least possible number.

one person with the management of several signals, is com-mendable. Danger increases with the number of persons employed in such transmission, because the care for safety is divided, the responsibility is distributed, and every or concerned is afforded the opportunity of relying upon som one else.

"11. The giving of every signal must be accomplished with the greatest possible facility.
"12. If on a double-track road, in consequence of the im-

passibility of one track, trains are compelled to pass in both directions on the other, the section concerned must be regarded as a single-track road, and the systems of signaling

use under such conditions must be adopted.

On such roads as have three tracks, the third track is to be regarded as a single-track railroad.

"13. When at one and the same place on a railroad different signals are shown, the most important should always be obeyed.

"On the Brunswick Railroads the rule is in force: 'If, in addition to "stop" another signal is displayed, the stop sig-

nal must always be obeyed.'
["Signal Directions for the Austrian Railroads, \$56. 'If, at the same point differing signals are displayed simultaneously, the m ost important signal must be obeyed, but after due reflection.']

"14. Absence of any signal, then, should always mean stop," if the principle expressed under 4 is not followed. If the signal system of the road is not to arranged as if a train were always due, then the non-appearance of a signal st be looked upon as a signal to stop.

"In Germany this principle has been introduced only on comparatively few roads; on most roads the locomotive engineer is permitted to proceed cautiously and slowly as far as he can see the track clear before him. On Spanish, French and English roads the operation of this principle is not necessary. There the line is always ready to receive a train, so that in the absence of signals the train may go on cautiously."

Railroad Prospects in Oregon.

In an address recently delivered to the merchants of Portland, Or., Mr. Henry Villard made some interesting state-ments as to the intentions of the Northern Pacific and the Oregon Railway & Navigation Company. After referring to a charge that the companies would discriminate against Portland in favor of Puget Sound ports, he said:

ments as to the intentions of the Northern Pacific and the Oregon Railway & Navigation Company. After referring to a charge that the companies would discriminate against Portland in favor of Puget Sound ports, he said:

Take possession of Puget Sound towns, or such of them as are best adapted to shipping grain or other products of the country. Do your shipping at Puget Sound when it is difficult to get tonnage down the river, as at present. There has been no discrimination heretofore in favor of Portland as against Fuget Sound, and I can assure you that none need be expected in the future. We must carry the products of the country out of the country. It is our interest as transportation companies to do so, and it is the greatest benefit that we can possibly confer upon this whole region, that we should facilitate in every possible way the shipment of its products. If wheat cannot be taken down the control of the products of the result of the products of their labor veceive them as stickly as essible. That is the ground I take. I am satisfied it is within your power as shipping merchants to take possession of the grain trade at Puget Sound. And I feel sure that after we complete our railroad connections with the Sound, as we propose to do during the next year by putting in the link between Portland and Kalama, and you see that grain can be carried from the Willamette valley and from the whole region east of the mountains to Puget Sound without breaking bulk, you will avail yourselves of the new facilities thus afforded. I do not see the difference between loading ships at Portland and at Puget Sound as far as the particular advantages to the shipping houses are concerned. They can have warehouses there; they can collect their wharfage dues as well there as here. Our great object must be, as I stated, to open as many channels of transportation as we can create, and to let commerce flow through them as freely as possible.

You may be interested to know what our programme of operations is for the immediate future.

^{*}Too great attention cannot be bestowed on these considerations in the construction of railroad signals.

*To ovviate errors in the totally different nomenclature of the groups of officials employed in the operation of the road, we shall in future make use of the following classification:

1. *Nation-men: All employes whose duties are connected with the stations, including station-master and deputy, switch-tenders, yard-men, etc.

2. *Track-men: Road-guards and signal-men; also those attacks.

yard-men, etc.

2. Track-men: Road-guards and signal-men; also those styled track-watchmen or track-inspectors.

3. Train-men: All employed serving on a moving train, in-

a. Locomotive-men: Engineers and firemen.
b. Car employés: Conductors, ticket-collectors and brak-

at the rate of \$2.50 less per ton than the rate the Oregon Railway & Navigation Company had to pay in sending railroad material to Portland. When it comes to shipping 50,000, 60,000, 70,000 or 80,000 tons, of course such a difference is a very essential item. And you would consider us very poor business managers if we did not avail ourselves of the difference by sending our ships to Tacoma in preference to sending them here.

The Northern Pacific lines will be pushed forward with the utmost energy during the coming year. The gap between the two ends, that is, between the Yellowstone Valley and Clark's Fork of the Columbia River, is to-day reduced to less than 800 miles. We are very confident of being able to build 300 miles from this side eastward, and about the same mileage from the other side westward during the coming year, so that there will be a gap of not much over 170 miles left. Whether we shall be able to still further reduce this gap in the next year will depend upon the result of investigations now making into the practicability of working at the two very large and difficult tunnels, one through the main Rocky Mountain range, and the other through the so-called Belt Range, that we shall have to overcome. If we can work at these tunnels from different points next year, we may do still better. But, at any rate, you can absolutely rely upon the entire completion of the main line of the Northern Pacific. This company has guaranteed to it all the capital it needs; that is, all the capital required to build it as a main line to Ainsworth, the point of junction with the subject. it might interest you to hear that the Oregon & California railroad will be extended eventually south to connect with the California & Oregon road. Everything is yet, however, in an unsettled condition. We have located a line from Roseburg south to Canyonville, and contracts for the heavier part of the work will soon be given out. Surveys show that we will have much difficulty in getting over the Cow Creek hills, south of Canyonvill

General Railroad Mems.

MEETINGS AND ANNOUNCEMENTS.

Meetings will be held as follows:

New York, Lake Erie & Western, annual meeting, at the office in New York, Nov. 29, at 11:45 a. m.

New Orleans & Northeastern, annual meeting, at the office in New Orleans, Dec. 5, at noon.

Old Colony, annual meeting, in the Town Hall at Middleboro, Mass., Nov. 22, at 10:30 a. m.

Railroad Conventions.

The International Road-Masters' Association will hold its adjourned convention in Cleveland, O., Nov. 16.

The Railway Conductors' Life Insurance Association of the United States and Canada will hold its annual meeting at the St. Charles Hotel, in New Orleans, beginning at 10 a. m. on Dec. 7. The meeting will last probably two days.

Dividends.

Dividends have been declared as follows: Cleveland & Pittsburgh (leased to Pennsylvania Company), 134 per cent., quarterly, payable Dec. 1. Ecansville & Terre Haute, 2 per cent., semi-annual, pay-able Nov. 15.

Foreclosure Sales

The sale of the Florida Central road, which was to have taken place Nov. 5, has been postponed to Dec. 11 by order of the United States Circuit Court.

Southern Association, General Passenger & Ticket Agents.

This Association met in Atlanta, Ga., Nov. 9, with a full attendance. The first day's session was chiefly taken up with routine business and the appointment of a committee on winter rates. The second day's report has not yet reached

sissippi River Improvement Convention

Mississippi River Improvement Convention.

The Mississippi River Improvement Convention met in St. Louis, Oct. 26, and continued in session three days, nearly 500 delegates being present. The Chairman was Mark H. Dunnell, of Minnesota, with a number of vice-presidents, and George L. Wright, of St. Louis, as Secretary.

The time of the Convention was mainly employed in hearing speeches and discussing the report of the Committee on Resolutions. The resolutions finally adopted urge strongly upon Congress the policy of liberal appropriations for the improvement of the Mississippi and its navigable tributaries; the expenditure of such appropriations in a systematic manner and upon a general and scientific plan; the continuance of the present Mississippi River Commission and the extension of its powers to all the navigable tributaries of the river; the completion of a connection between the upper waters of the river and Lake Michigan, this being understood to refer to the proposed Rock Island & Hennepin Canal. At the close of the Convention a permanent Executive Committee was appointed; also a committee to embody the substance of the resolutions in a memorial to be presented to Congress.

Southwestern Railway Association.

The long-postponed meeting of this Association was held in Chicago, Nov. 1. Those present were Messrs. J. C. McMullin, C. H. Chappell, and H. H. Cartright, Chicago & Alton; T. J. Potter and E. P. Ripley, Burlington; R. R. Cable and J. T. Sanford, Rock Island; John B. Carson and W. H. McDoel, Hannibal & St. Joseph; J. F. Barnard and Secretary H. Crosby, Kansas City, St. Joseph & Council Bluffs; R. S. Hays, A. A. Tallmage, and Seth Frink, Missouri Pacific; J. C. Gault and A. C. Bird, Wabash, and Commissioner Midgley, who presided.

The first action was to refer all matters to the Executive Committee, Messrs. McMullin, Potter, Cable, Tallmage and Gault. The committee was to report a plan for the conduct and operation of the business of the Association.

The day was taken up chiefly in discussions of the various questions which have lately divided the Association, and especially of the extension of its territory. Finally a committee consisting of Messrs. Gault, Tallmage and Potter was appointed to report what territory should be included in the Association's field besides that now embraced in it, and to define what business may be properly considered competitive.

On the second day the committee reported, recommending

to define what business and the committee reported, recommending On the second day the committee reported, recommending

that a pool be formed of all Colorado business to and from Chicago, St. Louis and Mississippi River pointe.

The discussion of the question as to what territory should be included in the operations of the Association was discussed nearly all day.

It was finally proposed to organize a pool to include the present territory be refered to the roads west of the Mississippi River, and if they cannot agree, the matter is to be left to arbitration.

It was left to the Nebraska roads to agree on what shall be considered competitive business. The Association and the Missouri Pacific to decide on the business carried in Southern and Southeastern Nebraska, the matter to be referred to arbitration if no agreement is reached.

On the third day the question of extending the territory was again discussed, and a settlement was agreed on whereby the Missouri Pacific and the Chicago, Burlington & Quincy roads are to be given a fair equivalent of the new business that they will bring into the Association from points south and southeast of Kansas City, on the Missouri Pacific and that passing through Plattsmouth on the Burlington.

The matter of the Colorado pool was brought up, but was not discussed nor settled.

The question of territory being settled, the questions of divisions came up, and, while believed that the three divisions of the Association would be merged into one, it was deemed advisable to continue three divisions for the present, to be known as the Chicago, the Hannibal & Toledo and the St. Louis Divisions. The business carried on in the Hannibal & Toledo and the St. Louis Divisions remain the St. Louis Divisions and 11 per cent. to the Hannibal & Toledo and Detroit lines. The percentages to be allotted each of the three divisions remain the same as before, namely: 44½ per cent. to the Chicago Division, 44½ per cent. to the Chicago Division, 44½ per cent. to the Chicago Division and 11 per cent. to the Hannibal & Toledo Division and 11 per cent. to the Hannibal & Toledo Division and 11 per cent. to the Hannibal & T

ELECTIONS AND APPOINTMENTS.

Atchison, Topeka & Santa Fe.—The following circular om Chief Engineer A. A. Robinson is dated Topeka, an., Nov. 1:

Atchison, Topeka & Santa Fe.—The following circular from Chief Engineer A. A. Robinson is dated Topeka, Kan., Nov. 1:

"The following appointments and changes are hereby authorized and in force from and after this date. All parties interested will be governed accordingly.

"I. Mr. J. M. Meade, Resident Engineer, will have charge of bridges and buildings on Division No. 1, from Atchison, Kansas City and Pleasant Hill to Howard and Florence, with headquarters at Topeka.

"2. Mr. D. H. Rhodes, Resident Engineer, will have charge of track, bridges and buildings on Division No. 4, covering the main line from Ellinwood to State Line, with headquarters at Ellinwood.

"3. Mr. J. M. Woodard will report to Mr. Rhodes as Road-Master in charge of track from Ellinwood to Cimarron, with headquarters at Ellinwood.

"4. Mr. S. Harpster will report to Mr. Rhodes as Road-Master in charge of track from Cimarron to State Line, with headquarters at Colidge.

"5. Mr. D. W. Hogbin will have charge of bridges and building between Ellinwood and State Line, with headquarters at Ellinwood, and will report to Mr. Rhodes.

"6. Mr. P. Sayres will have charge of bridges and buildings from Atchison to Emporia, with headquarters at Topeka, and will report to Mr. Meade.

"7. Mr. R. Tweeddale will have charge of bridges and buildings between Topeka and Kansas City and Pleasant Hill, with headquarters at Topeka, and will report to Mr. Meade.

"8. Mr. J. O'Connell will have charge of bridges and Weade.

"8. Mr. J. O'Connell will have charge of bridges and Weade.

Meade.

"8. Mr. J. O'Connell will have charge of bridges and buildings between Howard and Ellinwood ria Emporia, Florence and the McPherson Branch, with headquarters at Emporia, and will report to Mr. Meade and Mr. R. R. Coleman.

buildings between Howard and Ellinwood via Emporia, forence and the McPherson Branch, with headquarters at Emporia, and will report to Mr. Meade and Mr. R. R. Coleman.

"9. Mr. W. H. Earl, Resident Engineer, will have charge of track, bridges and buildings on Division No. 5, from State Line to Rockvale, with headquarters at La Junta.

"10. Mr. E. Treadwell, Resident Engineer, will have charge of track, bridges and buildings on Division No. 6, from La Junta to Raton, with headquarters at Trinidad.

"11. Mr. B. S. Crocker, Assistant Engineer, will have charge of the construction of all new buildings between Atchison, Kansas City and Pleasant Hill, and Howard and Ellinwood via the McPherson Branch, and also of extensive repairs which will be placed in his hands by special order. Mr. Crocker will have his neadquarters at Topeka.

"12. Mr. Geo. T. Nealley, Assistant Engineer, will have charge of the construction of all new buildings and of extensive repairs, by special order, between Douglas and State Line via Florence and Newton, and also of the branches from Newton to Arkansas City and Caldwell. Mr. Nealley will have his headquarters at Nickerson.

"13. Mr. Geo. Weight will have charge of track as Road-Master between Atchison and Emporia, with headquarters at Topeka, and will report to D. Coleman, General Road-Master.

"14. Mr. Geo. J. Lockie will have charge of track as Road-Master between Florence, Ellinwood and Nickerson via McPherson Branch, with headquarters at Ellinwood, and will report to R. R. Coleman, Resident Engineer.

"15. Mr. E. A. Smith will have charge of track as Road-Master between Newton and Arkansas City and Caldwell, with headquarters at Newton, and will report to R. R. Coleman, Resident Engineer.

"16. Mr. Jas. Norton will have charge of bridges and buildings between Douglas to Nickerson via Florence and Newton, with headquarters at Newton, and will report to R. R. Coleman, Resident Engineer.

"17. Mr. M. G. Shaver will have charge of bridges and buildings between Douglas and Ellinwood via Flo

Bluffton & Union City.—The officers of this company are: John Studebaker, President; Adelma Lupton, Vice-Presi-dent; J. J. Todd, Secretary; Amos Cury, Treasurer; Albert Russell, Chief Engineer. Office in Bluffton, Ind.

Boston, Lowell & Concord.—The list of officers of this consolidated line is now as follows: Henry C. Sherburne, General Manager; C. E. A. Bartlett, Treasurer; C. S. Mellen, Auditor; J. F. Crockett, Master of Transportation and Repairs; Joseph S. Linçoln, General Freight Agent; Benjamin F. Kendrick, General Ticket Agent; John W. Wardwell, Freight Agent in Boston. The offices are in Boston.

Buffalo, New York & Philadelphia.—The following is the official announcement of a change heretofore noted: "Mr. F. S. Buell having resigned the position of General Passenger Agent of this company, on account of his duties as Seretary and Treasurer requiring his entire attention, Mr. W. S. Baldwin is hereby appointed to that position with headquarters at Buffalo, N. Y. All communications pertaining to the business of that department should hereafter be addressed to him. Appointment to take effect Nov. 1, 1881."

Buffalo, Pittsburgh & Western.—Mr. Oliver Watson, Jr., is Superintendent pro tem. of this road.

Central, of New Jersey.—Mr. W. H. Marshall has been pointed General Road-Master of the Long Branch Divion. He was recently on the Terre Haute & Indianapolis

Chesapeake & Ohio.—Mr. T. L. Chapman is appointed Assistant Superintendent of Motive Power, with office in Richmond, Va. This is a new office.

Chicago, Milwaukee & St. Paul.—The report telegraphed from Chicago that Mr. H. C. Atkins would succeed Mr. W. C. Van Horne as General Superintendent, is denied.

from Chicago that Mr. H. C. Atkins would succeed Mr. W. C. Van Horne as General Superintendent, is denied.

Chicago, Rock Island & Pacific.—The following circular has been issued by General Superintendent A. Kimball:

"Hereafter the entire car service of this company, including car accounts, the distribution of empty cars to the different divisions of the road, the furnishing of empty cars to its connections, and the ordering of foreign cars from them to fill its own orders, will be placed in charge of the Car Distributor.

"The car service of the different divisions of the road will be in charge of the train-masters thereof, and agents must deal with them in regard to the same.

"Train-masters will in like manner deal only with the Car Distributor in all matters appertaining to car service, and will be subject to his orders. They will deliver empty cars of this road to its connections only upon his instructions, and must order all foreign cars that they are unable to furnish from their own divisions from him.

"Train-masters' daily car reports, and agents' daily delayed car reports, now made to me at Davenport, will, after the above date, be made to the Distributor.

"Reports to the Car Accountant will be made as formerly—that officer reporting to the Car Distributor, with headquarters in Chicago; appointment to take effect from Nov. 1, 1881."

The following appointments of road-masters are announced: J. Burnett, Road-Master Illinois Division, Chicago to Rock Island and branches; J. W. Preston, Road-Master flowa Division, Davenport to Council Bluffs and branches; G. W. Dye, Road-Master Keokuk & Des Moines Division, Keokuk to Des Moines and Keosauqua Branch.

Cincinnati, New Orleans & Texas Pacific.—The full list of the officers of this company, which is lessee of the Cin-

Keokuk to Des Moines and Keosauqua Branch.

Cincinnati, New Orleans & Texas Pacific.—The full list of the officers of this company, which is lessee of the Cincinnati Southern, is as follows: President, Theodore Cook; Vice-President and General Manager, John Scott; Secretary, George F. Doughty; Treasurer, H. H. Tatem; Chief and Consulting Engineer, G. Bouscaren; General Freight and Passenger Agent, E. P. Wilson; Auditor, R. S. Pomeroy; Purchasing Agent, Julius Vihlein; General Northern Agent, Reau Campbell; General Eastern Agent, L. B. Morrison; Assistant Superintendents, Samuel Hunt, M. N. Beatty; General Master Mechanic, Jame Meehan. Offices in Cincinnati, O.

Cleveland & Marietta.—The officers of this compare: President, B. J. Gifford; Secretary and Audit Kreuthoffer; Superintendent, H. E. Bullock; Freight and Ticket Agent, F. B. Ogden.

Columbus & Western.—Dr. E. A. Flewellen is General Manager, with office in Columbus, Ga. Mr. George E. Whitehead has been appointed General Freight and Passenger Agent, with office in Savannah, Ga. Mr. Whitehead holds the same office on the Central Railroad of

Delaware, Lackawanna & Western.—Mr. Albert C. Salisbury is appointed Assistant Superintendent of the Utica Division, with office in Utica, N. Y. He has been Train Dispatcher for several years.

Evansville & Terre Haute.—Mr. O. S. Lyford, General Superintendent; Robert Forsythe, Traffic Manager, and A. S. Dunham, Auditor, have retired from their positions; they are all officers of the Chicago & Eastern Illinois.

Mr. C. J. Hepburn (who was Superintendent until a few months age) is appointed General Superintendent; G. J. Grammar, General Freight and Passenger Agent; E. B. Morgan, Auditor.

Hannibal & St. Joseph.—At the annual meeting in Hannibal, Mo., Nov. 7, the following directors were chosen: Myron P. Bush, Buffalo, N. Y.; John R. Duff, A. G. Gorham, Boston; John Bloodgood, H. H. Cook, Wm. Dowd, Wm. J. Hutchinson, Horace Porter, Elibu Root, New York. The new directors are Messrs. Duff, Gorham, Bloodgood and Hutchinson, who succeed Enoch Pratt, Jay Gould, Julius Hallgarten and Russell Sage, all of whom declined re-election.

Indiana Junction.—The directors of this new company are E. Haskell, Charles Thies, Albert L. Rice, John D. Olds, F. F. Boltz, Isaac B. Hyner and George W. Pixley.

Jeannerette & Cypremort.—The officers of this new pany are: George W. Whitworth, President; An Moresi, Vice-President; A. L. Mounot, Treasurer. at Jeannerette, Louisiana.

at Jeannerette, Louisiana.

Louisville & Naskville.—The following circular from General Manager F. de Funiak is dated Louisville, Oct. 31:

"Mr. Wm. Mahl having resigned the General Superintendency of the Short Line (Louisville, Cincinnati & Lexington road), to take effect Nov. 1, the heads of departments of this company will operate that road, under their direct supervision, same as the main stem and branches. Officers and employés of the Short Line will be governed and report accordingly."

Mr. Morris S. Belknap is appointed Superintendent of the Mobile & Montgomery Division, Selma Division, Western Railroad of Alabama, and Pine Apple Division of Pensacola & Selma Railroad, with headquarters at Montgomery. Appointment to take effect Nov. 5. He succeeds George Nason, deceased.

Manhattan.—At the annual meeting in New York, Nov. 9, the following directors were chosen: Jay Gould, Cyrus W. Field, Russell Sage, Samuel Sloan, John H. Hall, Sidney Dillon, William Garrison, George I. Gould, Edward M. Field, Washington E. Connor, Henry F. Dimock, George S. Scott, Robert M. Gallaway. Subsequently the new board met and elected the following officers: Jay Gould, President; Robert M. Gallaway, Vice President; F. E. Worcester, Secretary and Tressurer; F. K. Hain, General Manager.

Mississippi Valley.-The officers of this new company are

President, Hiram R. Steele; Vice-President, Rufus F. Learned; Secretary, John Rawle; Treasurer, Henry Frank.

Missouri Pacific.—Mr. George W. Cale is appointed Assistant General Freight Agent in place of James A. Hill, resigned. Mr. E. S. Abadie succeeds Mr. Cale as Contracting Agent in St. Louis.
Mr. J. M. Eddy is appointed Superintendent of the Missouri, Kansas & Texas Division, with office in Sedalia, Mo. He was formerly General Agent of the Atchison, Topeka & Santa Fe, and lately Superintendent of Construction on this division.

New York City & Northern.—Mr. W. M. Buchanan is pointed General Freight and Passenger Agent, in place S. C. Wilson, resigned.

New York & Connecticut Air Line.—The directors have chosen Samuel A. Olmstead President; Sheldon Collins, Vosen President; Thomas N. Browne, Secretary; C. V. Sidell, Treasurer.

New York Elevated.—Jay Gould and Russell Sage have been elected directors in place of H. R. Bishop and Benjamin Brewster, resigned.

Norwich & New York Transportation Co.—At the annual meeting last week the following officers were chosen: President, James H. Wilson; directors, Simeon E. Baldwin, Charles W. Copeland, W. Bayard Cutting, Francis H. Dewey, R. Suydam Grant, George W. Gill, Fraderick J. Kingsbury; Secretary and Treasurer, Oliver L. Johnson, Jr. The company owns the steamboat line running between New London and New York.

London and New York.

Pennsylvania.—Mr. Max Riebenack has been appointed Assistant Comptroller, a new office. He has been with the company 18 years, and for some time past has been Auditor of Passenger Receipts.

Mr. Thomas P. Sargent has been appointed Assistant Purchasing Agent. He has been with the company 25 years, most of the time in the Purchasing Agent's office.

Under the revised organization the following officers are designated by the new titles given below: Wm. F. Griffilts, Division Freight Agent Pennsylvania Railroad Division; Waiter Freeman, Division Freight Agent, United Railroads of New Jersey Division; Wm. C. Ward, Division Freight Agent Philadelphia & Erie Railroad Division; J. B. Erringer, Jr., Division Ticket Agent Pennsylvania Railroad Division; H. J. Fillman, Division Ticket Agent United Railroads of New Jersey Division; E. S. Harrar, Division Ticket Agent Philadelphia & Erie Railroad Division; Geo. W. I. Ball, Chief Conveyancer; Samuel Carpenter, Eastern Passenger Agent.

Peoria, Decatur & Evansville.—Mr. John S. Corning has

Peoria, Decatur & Evansville,—Mr. John S. Corning has been appointed General Agent of this company, with head-quarters at Chicago: his office is at No. 87 Clark street. This appointment took effect Nov. 1.

Philadelphia, Germantown & Norristown.—At the annual meeting in Philadelphia, Nov. 7, the following managers were chosen: For three years, Edwin N. Benson, Coffin Colket, Christopher Heebner, W. S. Wilson; to fill vacancies, Joseph W. Johnson, Jr., Thomas W. Walker. The road is leased to the Philadelphia & Reading.

Pittsburgh, Ft. Wayne & Chicago.—Mr. C. D. Law has been appointed Superntendent of the Western Division, in place of Charles D. Gorham, who has gone to the Chicago & Northwestern. _Mr. Law has been Engineer and Road-Master for some time.

Pittsburgh & Youghiogheny.—Mr. George S. Griscom has been chosen President. He is now on the Pittsburgh, Ft. Wayne & Chicago road.

Port Huron & Northwestern,—Mr. C. C. Jenkins has been appointed General Freight and Passenger Agent, with office at Port Huron, Mich.

Richmond & Danville.—A car record and mileage office has been established by this company at Richmond, Va., with W. A. Moody as Car Record and Trace Agent.
The resignation of Mr. H. C. Ansley, Local Treasurer and Assistant Auditor of this company, has been accepted, taking effect Nov. 1.
Mr. J. M. Dugger has been appointed Local Treasurer and Assistant Auditor in place of Mr. H. C. Ansley, resigned.

Saginaw Bay & Northwestern.—The efficers of this road (formerly the Pinconning Railroad) are: President, W. S. Gerrish, Muskegon, Mich.; Superintendent, E. W. Gerrish, Pinconning, Mich.; Treasurer, B. Birdsall, Portsmouth, Mich.; Auditor, F. T. Tillotte, Pinconning.

St. Louis & San Francisco.—Mr. H. S. Warner has been appointed Car Accountant.

appointed Car Accountant.

St. Paul Eastern Grand Trunk.—This company has elected officers as follows: President, Thaddeus C. Pound, Chippewa Falls, Wis.; Vice-President, John C. Clark, Warsaw, Wis.; Secretary and General Agent, Dana C. Lamb, Fond du Lac, Wis.; Treasurer, W. H. Young, Oconto, Wis. The directors are: George Buyer, John C. Clarke, O. A. Ellis, George C. Ginty, August Kickbush, Dana C. Lamb, Thaddeus C. Pound, L. C. Stanley, W. E. Strong, Jesse Spaulding, Charles M. Upham, Marion Westcott, W. H. Young.

Salt Lake & Western.—The officers are: S. H. H. Clark, President; T. W. Dunn, Vice-President; W. W. Riter, General Superintendent; R. A. Doremus, Chief Engineer; S. F. Gannett, Secretary and Treasurer.

Southern Association, General Passenger & Ticket Agents.—At the annual meeting in Atlanta, Nov. 9, the following officers were chosen: President. C. P. Atmore, Louisville & Nashville; Vice President, B. W. Wrenn, Western & Atlantic; Secretary, D. C. Allen.

Wabash, St. Louis & Pacific.—Mr. H. B. McClellan has been appointed General Agent, and will have charge of all passenger business in the cities of New York, Brooklyn, Jersey City and Newark, N. J., with hisoffice at No. 271 Broadway, New York, Mr. John J. Fowler, as Eastern Passenger Agent, No. 271 Broadway, New York, will have charge of all passengers matters east of Buffalo and Pittsburgh, with the exception of the cities named above and the New England states.

West & East,—Mr. W. H. H. Green is President of this mpany, with office in New Orleans.

PERSONAL.

--Mr. James A. Hill has resigned his position as Assistant General Freight Agent of the Missouri Pacific and leased lines.

—Mr. James McFarland, Superintendent of Motive Po of the Chesapeake & Ohio road, has taken a furlough several months, on account of his health.

-It is reported that Mr. Charles B. Peck has resigned his

position as General Traffic Manager of the Chicago & Grand Trunk road, and that he will accept the office of Manager of the projected Chicago, Portage & Superior road.

—Capt. Prince S. Crowell, of East Dennis, Mass., died suddenly in Boston, Nov. 5, aged 69 years. He was one of the first projectors of the Cape Cod Raiiroad, and was a large stockholder and for several years a director of the Old Colony Company.

—Mr. George S. Griscom, Superintendent of the Eastern vision of the Pittsburgh, Ft. Wayne & Chicago, has re-rued that position to accept the presidency of the Pitts-urgh & Youghiogheny Company and the Chartiers Coal burgh & Company.

—A dispatch, dated Nov. 4, from Buena Vista, Col., says: "John Evans, Chief Engineer of the Denver, South Park & Pacific Railroad, was shot and dangerously wounded yesterday afternoon by a discharged employé. His assailant was arrested and locked up."

—Mr. Charles Crocker, President of the Southern Pacific and Second Vice-President of the Central Pacific. has given to the San Francisco Academy of Sciences \$20,000 in Southern Pacific 6 per cent. bonds, the interest to be devoted to original scientific investigation on the Pacific slope.

—Mr. Wm. Ryle, a wealthy silk manufacturer of Paterson, N. J., died in that city Nov. 5, aged 48 years. He married a daughter of the late Charles Danforth and was a stockholder and director of the Danforth Locomotive Workshe was also for several years a director of the Delaware, Lackawanna & Western Company.

TRAFFIC AND EARNINGS.

Railroad Earnings. Earnings for various periods are reported as follows:

Ten months ending Oct 31: 1881. 1880. Inc. or Dec. 3,170,994 5,026,663 1,522,984 4,306,118 485,985 1,826,550 3,107,172 2,587,986 $\substack{2,467,030\\2,709,798\\1,291,878\\4,203,996\\324,077\\1,673,402\\2,088,158\\2,186,660}$ $\begin{array}{c} 703,964 \\ 2,316,865 \\ 231,106 \\ 102,122 \\ 161,908 \\ 153,148 \\ 1,019,014 \\ 401,326 \end{array}$ Denver & R. G.... Plint & Pere Marq. It. Western Gt. Western..... Mil., L. S. & West. Norfolk & Western Northern Pacific... St. L. & San Fran. St. P., Minn. & Nine months ending Sept. 30 Minn. & St. Louis. \$853,155 N. Y., Pa. & Ohio. 4,038,046 \$555,102 I. 3,832,461 I. \$298,053 205,585 53.7 Month of August : Minn. & St. Louis. \$137,528 \$72,950 L \$64,578 88.4 \$22,616 I. 150,134 I. 98,302 I. Line...
ntercolonial...
linn. & St. Louis.
l. Y., N. H. &
Hartford...
l. Y., Pa. & Ohio.
Month of October
sur., Ced. Rap. & \$5,654 31,270 26,165 354,317 I. 500,747 D. 182,813 74,38751.6 \$16,758 393,771 34,840 66,380 200,483 $8.2 \\ 19.0 \\ 4.4 \\ 6.5 \\ 9.5$ \$204,990 2,120,229 785,199 1,493,620 2,105,217 No Central Pacific... Chi. & Alton ... Chi., Mil. & St. P. Chi. & Northwest Chi., St. P., Minn & O... 371,787 665,686 129,369 127,441 177,058 71,395 241,673 565,485 308,545 $\begin{array}{c} 342,052\\ 473,318\\ 116,602\\ 73,568\\ 158,753\\ 40,124\\ 235,910\\ 358,456\\ 310,606 \end{array}$ 29,735 192,368 12,767 53,853 18,305 31,271 5.763 207,029 2,061 & O...R. G...

Denver & R. G...

Det, Lan, & No...

Gulf, Col. & S. F...

Flint & Pere Marq.

Mil, L. S. & West.

Norfolk & West.

Northern Pacific.

St. L. & San Fran.

St. P., Minn. &

Man. 345,056 I. 2,707,860 I. 1,529,538 D. $\begin{array}{c} 606,708 \\ 3,289,530 \\ 1,397,783 \end{array}$ Man.... Union Pacific Wab., St. L. & P.. 260,652 581,670 132,755Fourth week in October: Chi. & East. Ill ... \$42,465 \$31,119 I. \$11,346 36.6 Week ending Oct. 15: Gd. Trunk...... £43,235 £49,035 D. £5,800 11.8 Week ending Oct. 28: Gt. Western \$104,195 \$120,579 D. \$16,384 13.6 Week ending Oct. 29 : Chi. & Gd. Trunk. \$37,532 11.4

Grain Movement.

For the week ending Oct. 29 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years:

Northwestern		estern shipn		
Vear. receipts.	Total.	By rail. P.	c. by rai	l. receipts.
18742,578,641	2,412,374	292,512	12.1	2,255,461
18754.251,118	4,579,686	1,154,484	25.2	3.124,670
18764,308,747	3,902,672	2,351,914	60.3	4.010,805
18775,071,098	3,827.013	587,178	15.3	5,435,919
18784,893,449	4,088,021	905,027	22.1	6.262,386
18797,190,708	4,443.656	1,390,496	31.3	7.481,102
18808,166,032	6,748,761	2,326,182	34.4	9,100,198
18814,400,918	4,264,210	1,886,258	44 3	3,653,019

1879.....7,190,708
1880.....\$1,66.032
1881.....\$4,60,918
4,294,210
1,886,258
1841....\$4,40,918
4,294,210
1,886,258
144
3,3653,019
The receipts of the Northwestern markets this year are the smallest since 1876, and 48 per cent. less than lust year, but 397,000 bushels more than the week refore. The shirments of these markets are 2,484,000 bushels less than last year, and a little smaller than in 1879 and 1875, and 483,000 bushels less than the week before. The rail shipments have been smaller but once since the low rates were made. The Atlantic receipts are the smallest since 1875, and are 5,447,000 bushels (60 per cent.) less than in the corresponding week of last year. Compared with previous weeks of this year, they are 322,000 bushels more than the week before, but with that exception are the smallest since the middle of May.

Of the Northwestern receipts of the week this year, Chicago had 54 per cent., 18t. Louis 14.4, Peoria 13.2, Milwauke or the smallest since the middle of May.

Of the Most of the gain over the previous week was at Chicago. The receipts at Milwaukee were the smallest since the smallest since its traffic was interrupted by floods last February. At St. Louis there was a considerable gain.

Of the Atlantic receipts New York had 55.4 per cent., Montreal 12.3, Boston 12, Baltimore 11.6, Philadelphia 7.8, New Orleans 0.6, and Portland 0.3 per cent. Nearly the whole gain over the previous week was at New York, a loss at Boston was balanced by a gain at Montreal and Balatimore, and there was some gain at Philadelphia, The re-

re- Total bituminous

eipts at New Orleans have not been so small before since he second week of January. Exports from Atlantic ports for five successive weeks have

The exports of grain last week are the smallest, we believe,

Receipts and shipments at Chicago and Milwaukee for the week ending Nov. 4 were :

	Rece	ipts	Shipments		
Chicago Milwaukee	1881. 2,252,324	1880, 3,486,452 709,291	1881. 2,223,204 253,795		
Both	2,358,606	4,195,743	2,477,004	4,034,904	

The receipts were 44 per cent, and the shipments 38 per cent, less than last year.

Receipts and shipments at Buffalo in the week ending Nov. 4 were:

1111	Rece	ipts	Shipments.		
	1,621,000 520,500	1880. 2,402,185 687,300	1881, 1,742,900 715,900	1880. 1,022,500 1,172,300	
Total	0.141.500	9.000.403	0.459.900	9 484 600	

While there is a decrease in receipts, both by lake and rail, as has been common for some time, there has been an increase of 60 per cent, in the canal shipments and a decrease of 39 per cent, in the rail shipments, which is just the reverse of the course of things heretofore for some months. Receipts at four Eastern ports in this week were:

Tecorabon es	o rour area	ocasa boxes		COM WELL	
1881. Bushels P. c. of total. 1880.	New York, . 2,246,109 67.1	Boston. 359,129 10.7	Phila- delphia. 211,250 6.3	Balti- more. 532,070 15.9	Total. 3,348,558 100.0
Bushels P. c. of total.	5,154,085 68.5	443,450 5.9	792,600 10.5	1,139,003 15.1	7,529,138
The total less than lar centages of I Boston is tak	st year, the New York	nere is by	it little dimore, bu	change in	the per-

Coal Movement.

Anthracite tonnages for the ten months ending Oct. 29 are reported as follows, the tonnage in each case being only that originating on the line to which it is credited:

	1861.	1880.	Ix	ic. or Dec.	P. c.
Phila. & Reading	5,683,072	4,908,086	I.		15.8
North. Central, Sham-					
okin Div., and Sum-	848,895	740 407		108,468	14.7
mit Br. R. R Sunbury, Hazleton &	848,883	740,427	I,	100,408	19.7
Wilkesbarre	10.426	8,515	I.	1.911	22.5
Pennsylvania Canal.	388,470	411,763	Ď.		5.6
Central, of New Jer-	000,310	414,100		100,100	0.0
sey, Lehigh Div	3,717,964	3,104,882	I.	613,082	19.7
Lehigh Valley	4,609,677	3,606,786	Ĩ.		27.8
Pennsyivania & N. Y.	80.207	30,998	Î.	49,209	158.7
Del., Lack. & Western	3,495,487	2,865,559	I.	629,928	21.9
Del. & Hudson Canal	-11	.,,		,	
Co	2,937,714	2,446,043	I.	491,671	20.1
Pennsylvania Coal Co.	1,145,554	908,888	I.	236,666	26.0
State Line & Sullivan	51,233	37,181	I.	14,052	37.9
Total anthracite	22,968,609	19,069,128	I.	3,898,571	20.4
The tonnage of an	thracita fo	r the corres	mo	nding nori	od for
six years has been :	om acree to	a one corre	po	name ber	ou tor
six years has been :					
1881	22,968,699	1 1878		13.8	17 359

19.068,128 1877 14,626,835 21,585,647 1876 15,976,986

The anthracite output this year will probably be the largest on record. The market continues good.

The anthracite tonnage of the Belvidere Division, Pennsylvania Railroad, for the ten months was:

Coal Port for shipment	542,474		19,550 148,549 176,043	45.5
M-4-1	2 002 502	000 000	070 004	

Of the total this year 1,068,334 tons were from the Lehigh and 213,187 tons from the Wyoming Region. Actual tonnage passing over the Pennsylvania & New York road for the eleven months of its fiscal year from Dec. 1 to Oct. 29 was:

AnthraciteBituminous		1880. 618,182 395,714	I.	3.0 933 12,352	58.4
m-4-1	1.000 188	1 010 000	-	040 804	

Semi-bituminous tonnages reported for the $ext{ten}$ months were as follows:

1881.	1880.	In	c. or Dec.	P. c.
Cumberland1,757,004	1,783,593	D.	26,589	1.5
Huntingdon and Broad				-
Тор 172,076	146.708	I.	25,368	17.3
East Broad Top 68,826	55,907	I.	12.919	23.1
Tyrone and Clearfield1,966,442	1,390,930	I.	575,512	41.4
Bellefonte Snow Shoe. 98,418	46,094	I.	52,324	113.7
Total semi - bitumi-	3 493 939	T	620 524	19 7

Actual tonnage passing over the Huntingdon & Broad Top and for the ten months was as follows:

	Broad Top coal	1880. 146.708	Increase. 25,368	P. c.
,	Cumberiand coat200,878	213,779	47,099	22.0

The Broad Top coal is mined on the line; the Cumberland is carried through for the Pennsylvania Railroad.

Of the Cumberland tonuage this year 146,434 tons were carried over the George's Creek & Cumberland road.

Shipments of Cumberland coal away from the region were:

By Balt. & Ohio R. R By Bedford Div. Pa. R. R By Ches. & Ohio Canal	230,363	1880. 1,002,487 186,703 580,751	I.	or Dec. 124,281 43,660 182,816	$\frac{12.4}{23.5}$
Total	725 000	1 700 041	-	44.000	

١	Bituminous tonnages rep	orted for	the ten 1	nouths are	
١		1881.		Inc. or Dec.	P.e.
1	Barclay R. R. & Coal Co	383,362	395,713	D. 12.331	3.1
	Allegheny Region, Pa R. R.	230,096	261,033	D. 30,937	11.8
ı	Penn. & Westmoreland	700,320	780,300	D. 19,983	2.6
	West Penna. R. R	235,048	232,308	I. 3,450	1.5
	Southwest Penna	23,123	36,849	D. 13,728	37.1
	Pittsburgh Region, Pa R R	540 585	464 460	T 85 000	10 0

2,182,314 2,170,765 I 11,549

The coal tonnage of the Pennsylvania Railroad for the ten

Anthracite	2,513,221 1,798,952	1880, 989,906 1,796,230 1,775,052 1,542,855	Increase, 176,680 716,991 23,900 422,653	P. c. 17.8 39.9 1.3 27.4
Total	7 444 997	6 104 049	1 940 004	91.0

Snow Shoe & Clearfield ... 10,029 ... 80,504
Penn. & Westmoreland ... 101,526
Southwest Penna. R. R. ... 1,142,536
Pittsburgh Region, Pa. R. R. 468,784 1880. Inc. or Dec. P. c.
1. 10,027
1. 10,027
1. 29,918 58.7
11:,230 I. 49,901 44.6
66,496 I. 35,030 53.
902,404 II. 240,042 26.6
411,049 I. 57,735 14.0

Anthracite	1880.	Increase.	P. c.
	684,787	127,946	18.7
	176,191	1,790	1.0
Total990,714	860,978	129,736	15.1

The canals opened May 17 this year and April 20 last year.
In October the mines about Rich Hill, Mo., shipped 1,214 car-loads over the Missouri Pacific and 1,080 over the Kansas City, Ft. Scott & Gulf road; total, 2,294 cars, against 1,985 in September.

Lake Superior Iron Ore.

Shipments of iron ore from the Lake Superior Region up to Nov. 2 are reported as follows by the Marquette Mining Journal:

From L'Anse. 52,602 From Marquette. 661,650 From Escanaba 1,335,743	609,538	Increase. 823 52,112 250,751	P. c 1.6 8.5 23.1
Total2,049,995	1,746,309	303,686	17.2
Of the Escanaba shipments 9	87,352 tons	were from	the

Marquette District and 5,228 District. In addition to the iron ore 9,314 tons pig iron and 5,228 tons quartz were shipped from Marquette. There were 20,328 tons of ore delivered to local furnaces in that district.

Transportation of Explosives.

Mr. George H. Vaillant, General Freight Agent of the Lake Shore & Michigan Southern Railway, has just issued a special notice that, owing to the many disastrous accidents that heve recently occurred, and the great risk incurred in transporting explosive materials, his company is compelled to give notice that hereafter agents will positively decline to receive for transportation over his road all explosive materials, excepting ordinary gunpowder, properly packed in kegs, in magazines, or iron kegs.

Commissions on Passenger Business

The following circulars have lately been issued by Mr. James R. Wood, General Passenger Agent of the Pennsylvania Railroad Company:

James K. Wood, General rassenger agent of the remayivalus Railroad Company:

NOTICE TO CONNECTING LINES.

"Commencing this date the Pennsylvania Railroad issue of coupon tickets will be used exclusively in ticketing passenere business from the lines of these companies, and carefully prepared stocks of tickets have been placed on sale at all coupon offices. Connecting lines have received liberal representations to all points, and the various routes will be impartially represented by our agents and their assistants in the sale of tickets.

"Attention is called to a rule of these companies prohibiting agents or their assistants from receiving commission or other consideration for the sale of tickets over foreign roads, and it is specially desired that payment will not be made to our employés on this account, as any agent or representative of these companies receiving commission will, as soon as the fact becomes known, be dismissed from the service.

NOTICE TO AGENTS.

as the fact becomes known, be dismissed from the service.

NOTICE TO AGENTS.

"The attention of ticket agents is again called to a rule of these companies, prohibiting them or their assistants from receiving commission or other consideration for the sale of tickets over connecting railway or transportation lines. "It is my desire that all routes shall receive an impartial representation at our hands, and I am satisfied that this end cannot be atteined if agents or their assistants receive commissions on tickets reading over any particular line. Agents will, therefore, be careful to see that this rule is strictly observed from this date, as any representatives of these companies receiving commission from connecting lines will, as soon as the fact becomes known, be dismissed from the service."

Traffic of New York Canals.

York can als is reported as				
	1881.	1880.	Inc. or Dec.	P. c.
Tons shipped	231,171	197.090	Inc. 36,081	18.3
Miles cleared by boats	296,670	357.389	Dec. 60,719	17.0
Tolls	\$30,539	\$33,686	Dec. \$3,147	9.3

The chief items of freight	were,	in tons:		
	1881.	1880.	Inc. or Dec.	P. c.
Lumber	54,010	41,439	Inc. 12,571	30.3
Grain			Dec. 7,447	15.3
Potatoes and apples	4,801	4.612		
Iron and iron ore	25,957	15.925	Inc. 10,032	63 0
Coal		30,631	Inc. 20,758	67.8
Sugar and molasses	584	641	Dec. 57	9.0

In all the important items except grain there is an increase this year, but there were more short hauls, as is shown by the reduction of 17 per cent. in the miles cleared by boats. From the opening of canal navigation the business has

Days open Tons shipped Miles cleared by boats	4,529,315 5,992,771	195 5,780,284 9,410 564 \$979,889	29 1,250,969 3,417 793 \$428,544	15.0 21.5 36.3 43.7
And the average p	er day has		Decrease.	

Tons shipped...... Miles cleared by boats.

Apple Peelings as Freight.

The Chicago Tribune says: "A few days ago a shipper came to the office of a general freight agent of one of the Chicago roads and wanted to know the rate on apple peelings and cores. The general freight agent, who thought the shipper wanted to play a practical joke upon him, asked in return, 'What has become of the stems?' The shipper, how-

ever, explained that he was not a practical joker, but that he had actually several carloads of apple peelings and cores to ship, which were being used in the manufacture of 'apple butter,' and stated that there was considerable demand for apple peelings and cores at the places where dried apples are manufactured. The general freight agents have not yet placed this new article of merchandise on their list of classifications, but it will be done at the next meeting of the classification committee."

New York Produce Exchange Resolutions.

New York Produce Exchange Resolutions.
At a meeting of the Board of Managers, Nov. 7, it adopted the following resolutions:
"Whereas, The New York Produce Exchange desires to commend and approve of all movements tending to the benefit of New York, and
Whereas, During the late severe competition between the trunk lines of railroads for freights between the West and the Atlantic seaboard it was frequently stated by the press that the New York Central & Hudson River Railroad refused to come to any agreement with its rival lines for restoration of rates until New York city should be placed on terms of equality with and allowed freights at as low rates as any city on the ocean coast; therefore,
"Resolved, By the Board of Managers of the New York Produce Exchange, that in so far as the action of the New York Central & Hudson River Railroad was governed by this principle of right and justice to New York city and state, that road has our sincere commendation and carnest support; and further

and further

"Resolved, We most earnestly request of the New York
Central & Hudson River Railroad to use its great influence
to bring about at an early date the abolition of special rates
by all transportation companies."

Chicago and Milwaukee Receipts

For the first week in November were:

Chicago:	1878.	1879.	1880.	1881.
Grain, bu		2,762,163	3,341,119	2,193,092
Flour, bbls	80,010	87,824	99,554	76,418
Hogs, No	174,617	199,345	145,325	139,742
Milwaukee:				
Grain, bu	536,788	848,702	565,568	286,075
Flour, bbls	55,013	62,199	76.944	56,760
Hogs, No	24,947	35,161	24,456	21,835

The grain and flour receipts together are smallest this ear, and 35 per cent. less than last year. They are also set than in the previous week this year.

THE SCRAP HEAP.

Locomotive Building.

Locomotive Building.

The Illinois Central shops in Chicago are building two sixwheel shifting engines with 16 by 24-in. cylinders.

Articles of incorporation have been filed by the Chicago Locomotive Works, the capital stock being \$1,000,000, and the corporators Charles Howard, J. T. McAuley and D. K. Tripp. The new company intends to build extensive works, not far from the new Pullman car works; they are to have a capacity of three-locomotives a week. It is intended to have the shops ready for work by July next. A well-known mechanical engineer has already been engaged as Superintendent.

tendent.

The Brooks Locomotive Works at Dunkirk, N. Y., have taken a contract for 10 locomotives for the Ohio Central

Car Notes.

The Chicago, Milwaukee & St. Paul shops at Milwaukee re building 3 postal, 6 baggage, 4 express and 50 caboose

are building 3 postal, 6 baggage, 4 express and 50 cascars.

The Michigan Car Co. in Detroit has a contract for 100 box, 150 flat and 1,000 ore cars for the Detroit, Mackinac & Marquette road.

The Illinois Central shops in Chicago are building 100 eight-wheel coal cars, to be used in carrying coal to Cairo.

The car spring works of F. M. Atkinson & Co., of Chicago, have been purchased by the Chicago Tire and Spring Works, which will continue the manufacture of springs, in connection with that of cast-steel tires for locomotives, the latter being a new enterprise which will be in full operation in about 30 days.—National Car-Builder.

The Lake Shore & Michigan Southern shops at Adrian and Buiffale have begun to build 10 new postal cars, which are to have all the latest improvements. It is intended to make them model cars of their kind.

Bridge Notes.

Rust & Coolidge, of Chicago, are building two drawspans for the New York, Chicago & St. Louis: nine fixed spans for the St. Louis, Iron Mountain & Southern, and a long iron bridge over the Snake River in Idaho. They have also taken the contract for a double-track iron bridge over Rock River in Illinois for the Chicago, Milwaukee & St. Paul road.

The pile bridge of the New Orleans & Northeastern road across Lake Pontchartrain, near New Orleans, will be about six miles long. This, we believe, will be the longest bridge in the United States.

Iron and Manufacturing Notes.

The Juniata Iron Works of Shoenberger & Co. in Pittsburgh have recently been enlarged by the addition of an extensive plant for the manufacture of open-hearth steel plates, blooms and bilets.

The large rolling mill at Wheatland, Pa., is preparing to start up, and several of the puddling furnaces are already at work.

start up, and several of the puddling furnaces are already at work.

The Lackawanna Iron & Coal Co. is adding a large horizontal blowing engine to its steel works in Scranton, Pa., and has ordered another.

The additions to the works of the Pennsylvania Steel Co. at Baldwin, near Harrisburgh, Pa., are still in progress.

In the United States Circuit Court in Cleveland, O., last week, judgment was given in favor of Rhodes & Bradley against the Cleveland Rolling Mill Co. for \$213,885. The suit was for breach of contract, plaintiffs claiming that defendant had refused to receive 4,653 tons of pig-iron which they had agreed to purchase, and which was made by the Leland Iron Co. The defense was that the iron was not delivered within the time specified in the contract.

Mt. Hickory Furnace. near Sharpsville, Pa., has been thoroughly repaired and has gone into blast again. It is a very large furnace.

The Rail Market

The Rail Market.

The market for steel rails is steady and prices firm, quotations remaining about \$60 per ton at mill for 1882 orders and \$62.50 for immediate delivery.

Iron rails are steady and unchanged, with no large transactions reported. Quotations are about \$48 per ton at mill for heavy rails, up to \$53 for light sections.

Few sales of steel blooms are reported, and \$45.50 per ton, duty paid, is quoted.

Old iron rails are higher, and holders are asking \$29 per ton in Philadelphia for T-rails and \$32 for double-heads.

Spikes are in demand at \$3.10 to \$3.15 per 100 lbs.; in

some cases a premium has been paid for early deliveries. Fish-plates, \$2.60 per 100 lbs.; track bolts, \$3.25 to \$4.

An Old Passenger Car.

The Cayuga Division of the Delaware, Lackawanna & Western Railroad has a passenger coach that was built in 1848. In the centre of the car is a square stove, covered with iron flowers. Around it are six seats arranged to give ample room for moving about.—Utica (N. Y.) Herald.

This arrangement—the stove in the centre of the car with seats arranged in a square around it—was common some 20 or 30 years ago, on the Camden & Amboy and some other roads.

Running Through a Herd of Buffaloes.

Running Through a Herd of Buffaloes.

The passengers on last evening's train from the Yellowstone had an experience exceedingly rare. When about two miles from Sentinel Butte, the dividing line between Montana and Dakota, a herd of 16 buffaloes were seen a short distance ahead, within easy rifle range. There were several soldiers on board with army rifles, and numerous small revolvers were also pointed toward the excited bisons. A perfect volley of lead was poured into the herd, but to no effect. They bounded away over the divide, and were soon out of sight. The passengers had no sooner begun a discussion of what they had seen in years gone by, than a danger signal from the locomotive brought every one to the lookout. A herd of 20 or 30 buffaloes were making directly for the train; and, fearing the engine would strike them and be thrown from the track, the air brakes were set, and the train nearly brought to a standstill, while the buffaloes crossed the track a few feet ahead. Every gun was again leveled. Such excitement cannot be described. Bullets flew in every direction, some striking the ground as near as ten feet from the train, others raising the dust a mile distant. The train moved on slowly, and the volleys of lead continued to pour from the guns of the excited passengers. Finally the smoke cleared away, and the buffalo could be seen about half a mile away, trotting along as unconcerned as though they had never seen a railroad train. The disgusted passengers drew in their weapons and spent the rest of the day arguing as to the probable amount of lead that a buffalo will carry before he will weaken. Pictures of railroad trains passing through herds of buffaloes are numerous, but the actual experience is one of which the passengers may feel proud. They were probably but straggling bands from the main herd, which is 40 or 50 miles north of the track. From Sentinel Butte east to Pleasant Valley (Dickinson) at least 500 antelopes were seen, which is but a daily occurrence. Verily, the North Pacific is the sp

Iron Ore in Mexico.

sportsman's paradise.—Bismarck (Dak.) Times.

Iron Ore in Mexico.

The Continental, the official paper of the state of Sinalon, Mexico, in an article on the Sinaloa & Durango Railroad, says: "An extraordinary deposit of magnetic iron ore has been discovered in a hill situated about four leagues northeast of Culiacan, upon the property of Don C. M. de Castro, Judge of the district of Tipuche. The Chief Justice, the Governor, Edward P. North, the Superintendent of the railroad, together with the writer, upon an invitation from the owner of the land upon which are situated these iron ore bodies, made a visit of inspection on Sept. 18, After arriving at Tipuche they shaped their course east, soon beginning to ascend the hill, which appears to be one of the first ridges of the Tachinolpa Mountains. Every step of their progress and in all directions on the western side (the side they were ascending), were met and seen, large bright, black boulders projecting through and lying upon the soil of the declivity. An inspection of the rocks, splitting them by means of bars, disclosed the appearance of mineral. Holding close to one of these rocks a small compass, the controlling of the needle by it disclosed its magnetic character, satistying all that the ore was magnetic iron.

"Ascerding farther up the hill, the sight rested upon a continuous chain of large boulders, all carrying the s.me class of ore. This disclosed the fact that the mountain was one vast body of magnetic iron ore, and that these boulders were the croppings from an immense vein. Mr. North, by means of his aneroid, found the height of the hill to be 290 feet. Supposing the hill to be an approximately regular cone, with its sides inclining at 35°, it was estimated that the hill contained 52,000,000 cubic feet of mineral, apart from that quantity below its base.

"Besides this hill, there are several others upon the same piece of land, all carrying the same mineral characteristics, but which, for want of time, they were unable to explore. There is also near

Cheap Sleeping Cars.

Cheap Sleeping Cars.

The Wisconsin Central road has converted two ordinary passenger coaches, 50 ft. long, into sleepers, to run between Milwaukee and Ashland, by putting the seats further apart and placing them in pairs. There are 10 pairs on one side and 11 on the other, making 21 lower berths and no upper ones. The seat-back arms are made about 6 in. longer than the ordinary ones, with a notch to hold the backs in their usual position; the arm from the notch to the end is slotted, so that the backs of the two facing seats can be moved 12 in. further apart when the bed is to be made up. Rattan seating is stretched over frames the size of the berths. These frames are carried in a closet during the day and laid upon the seats at night and the mattresses spread over them. The mattresses, bedding and curtains are carried during the day in boxes under and between the pairs of seats, which are placed back to back. The berths are separated by curtains hung from the roof down between the seat-backs, and curtains are hung from rods in front in the usual way. The windows have curtains hung with rings and rods. At the top of the alternate window panels are Creamer ventilators. At the end of the car is the saloon, which was in the car before it was changed. Opposite is a large box stove for burning wood; at the other end of the car is another stove; opposite this are the ladies' and the gentlemen's toilet rooms and the closet for the bed frames. At each end of the car behind the seats next to the closets are boxes for bed line. These cars are very popular, and are preferred to the regular sleepers on account of their comfortable beds and good, ventilation, and the absence of upper berths. The charge for berths is the same as on ordinary sleepers.—Notional Car-Builder.

Paying off on the Pennsylvania.

Paying off on the Pennsylvania.

In the Paymaster's department of the railroad there is much interesting information to gain. For instance, when a month's time has been served the time rolls of each man must be strictly kept by the department or shop foreman even to the minutest detail. When the month expires these rolls are handed to the Assistant Paymaster in the Superintendent's office, who, in turn, makes out the pay-rolls, this requiring four or five days. They are then put in a pressure of the superintendent's office, who, in turn, makes out the pay-rolls, this requiring four or five days.

and 60 rolls copied at one impression. The copy for the use of the Superintendent, who must approve each, besides the original, is sent to the Treasurer of the company at Philadelphia. The Treasurer, with a large clerical force, fills out the Pennsylvania Railroad checks, payable to each employe for the amount his time calls for. These checks are received all over the country as readily as government notes, gold or silver. Mr. Nigel Bruce, the Assistant Paymaster at the Union Depot, with a force of clerks, commences to deal out these checks at the depot, first taking each employe's receipt opposite his name on the pay-rolls, then goes to the Twenty-eighth street shops. There he is provided with the Superintendent's special car for a trip over the entire division and branches, stopping at every point where a party of employe's are to be found on the tracks, hedges, culverts, at depots, etc. It is calculated that this work requires half the month, so that when some monthly salaries are due they are not paid before the middle of the succeeding month. This may seem hard, but the men are apparently satisfied, because the thing cannot be remedied. The company has offered a premium for any one that can suggest a more practical, safe and simple plan for distributing the money belonging to their employes at the time it is due, but, so far, every suggestion has failed. The writer saw in the hands of the paymaster about one year ago a check for 20 cents. This check had not been called for, and went over from mouth to month, and was finally returned to the Treasurer as not called for. When investigated it was found that the employé had been killed after he had earned just 20 cents. Of course his executors failed to draw the money and receipt for the same, and it was forfeited, but the illustration will serve to show how exact the time of the employé is kept.—Pittsburgh Telegraph.

OLD AND NEW ROADS.

Allegheny Central.—This road is now completed and trains are running from Olean, N. Y., by way of Bolivar and Richburg to Friendship on the New York, Lake Erie & Western road. The road is of 3 ft. gauge and about 20 miles long; it passes through the northern part of the Bradford oil district.

Arkansas State Railroad Bonds.—A dispatch from Little Rock, Ark., Nov. 5, says: "The Attorney-General of the state, in response to an inquiry from the Governor, has given an official opinion that the railroads to which state aid bonds were issued a few years ago are legally liable for the payment of the bonds. There are \$5,350,000 of these bonds outstanding, issued to the following roads: Memphis & Little Rock, \$1,200,000; Little Rock & Fort Smith, \$1,000,000; Little Rock, Pine Bluff & New Orleans, \$1,200,000; Mississippi, Quachita & Red River, \$600,000, and Arkansas Central, \$1,350,000. All of these roads are now completed, and are doing a good business with the exception of the two last named, and work is being vigorously pushed on the Quachita road. Senator Garland, Gov. Churchill, ex-Chief-Justice M. S. McClure, and others, have expressed opinions similar to that of the Attorney-General. Suits are to be instituted in the United States Court at once to force the railroad companies to settle the question."

Canadian Pacific,—Proposals will be received by Mr.

Canadian Pacific.—Proposals will be received by Mr. F. Brawn, Secretary of the Department of Railways and Canals of the Dominion of Canada, at Ottawa, until Feb. 1, 1882, for the building of the road between Port Moody and Emory's Bar, in British Columbia, about 85 miles. Information can be obtained at the Chief Engineer's office in Ottawa, or at the railway office at New Westminster, British Columbia. This timely notice is given with a view to giving contractors an opportunity of visiting and examining the ground during the fine season and before the winter sets in.

Chesapeake & Ohio.—Track is now laid on this company's Elizabeth, Lexington & Big Sandy line to Herat, Ky., 66 miles eastward from the old terminus at Mt. Sterling, and 100 miles from Lexington. Just beyond Herat is the Means Tunnel, the completion of which is expected in a few days. As soon as track can be laid through the tunnel the connection through to Ashland will be made.

Chicago, Milwaukee & St. Paul.—The extension of the Southern Minnesota Division from Dell Rapids, Dak., southward to Sioux Falls, 19 miles, is completed. The ex-tension from Madison, Dak., west to Howard, 22 miles, is pearly does.

Chicago & Northwestern.—On the Calliope Branch, which is to run from this company's Toledo & Northwestern line at Eagle Grove, Ia., westward, track is now laid from Eagle Grove, 22 miles, and work is being pushed towards Sioux Rapids. Work is being pushed on the main line also.

Chicago, Rock Island & Pacific.—The trains of the Southwestern Division have begun running regularly over the new cut-off between Davenport, Ia., and Muscatine, whose completion was recently noted.

Chicago, St. Louis & New Orleans.—This company has reduced its passenger fares to the uniform rate of cents per mile, where tickets are bought. On fares collected in the cars conductors are instructed to charge 5 cents per mile.

mile.

Cincinnati, Indianapolis, St. Louis & Chicago.—
The New York World says: "The committee appointed by stockholders of the Indianapolis, Cincinnati & LaFayette Railroad to take action for the recovery of the road from the new organization, have reported to the stockholders that the matter has been compromised for \$50,000. This is equal to 2 per cent. on the stock after deducting the assessment. A dispatch received in this city, however, announces that a new suit will be instituted at once to redeem the road, in which fraud and collusion in the sale of the road to the company now known as the Cincinnati, Indianapolis, St. Louis & Chicago Railroad Company will be charged. This suit will be brought by persons who will be likely to accept no compromise that does not return the road to the stockholders."

Cincinnati Southern.—At a recent meeting of the rustees the following statement was presented for the quar-

ter ending June 30:	
	\$539,718.36
Total operating expenses	242,365.77
Net earnings	\$296,752.59 28,802.05
Trustees' shere of earnings	\$267,950.54

97,617.60

Trustees' surplus for the quarter .. \$170,332.94

The percentage of the aggregate cost of maintenance for the quarter ending June 30, 1881, as compared with the gross revenue of the company, was 14.4 per cent., and the total percentage of operating expenses, similarly compared, was 59.8 per cent. Similar comparisons for the preceding quarter show 19.9 per cent. and 70 per cent. respectively.

Columbus, Hocking Valley & Toledo.—A report is current that a syndicate of English capitalists, who have lately bought some large tracts of coal and iron lands in the Hocking Valley, are negotiating for the controlling interest in this road. The present owners bought it only a few

Denver & Rio Grande.—This company has completed and opened for business the San Luis Valley Branch, which extends from Mears, Col., on the Gunnison Division, 228 miles from Denver, southward to Villa Grove, 19 miles. The Blue River Branch has been extended from Robinson, Col., northeast to Wheeler's, nine miles, making the branch 25 miles long from Leadville.

On the Eagle River Branch track is now laid to Eagle Park, Col., seven miles from the late terminus at Mitchell, and 20 miles from the main line at Malta.

Denver, South Park & Pacific.—The Fairplay Bran-has been completed and opened for business from Gar Col., 107 miles from Denver, to Fairplay, 10 miles.

Evansville & Terre Haute.—This road is apparently no longer under the complete control of the Chicago & Eastern Illinois. It is said that that company secured two-fifths of the stock, and about the same time the Louisville & Nashville secured two-fifths, leaving one-fifth in the hands of persons in Evansville who refused to sell, and who thus held the balance of power. It has been finally agreed, at the instance of the Evansville people, that the road shall be operated independently, showing no special favor to any of its connections.

Fulton County.—Track has been laid to London Mills, Ill., 11 miles from the old terminus at Fairview, making the road 40 miles long from Havana. The bridge over Spoon River at London Mills is about finished, and work is being pushed from that point to Galesburg.

Galveston & Rio Grande.—This company has filed articles of incorporation to build a railroad from Galveston, Tex., southwest to Laredo on the Rio Grande, with a branch to Rio Grande City. The office will be in Galveston.

Georgia Pacific.—Contracts have now been let for atout 100 miles of this road, from Atlanta, Ga., westward to Anniston, Ala., the crossing of the East Tennessee, Virginia & Georgia's Selma Division. It is now announced that the road is not to stop at the Mississippi River, but is to be extended across Arkansas to Texarkana.

Grand Southern.—This company began last week run a regular train through between St. Stephen, N. B., Carleton, just across the river from St. John. The busi has been interrupted temporarily by a fight with the John & Maine over the use of certain tracks in Carleton.

Guideau Springs.—This company has been organized a nild a road from Arkansas City, Kan., to Dodge City, with branch from Guideau Springs to the Sumner county bout 200 miles in all.

Indiana Junction.—This company has filed articles of acorporation to build a railroad from Wabash, Ind., east to the Ohio line, about 60 miles.

Iowa Eastern.—This road has been sold to the Chicago, Milwaukee & St. Paul. It connects with that road at Beulah Junction, Ia., and runs thence 15 miles to Elkader Station; it is of 3 ft. gauge. The new owner will change the gauge to 4 ft. 8½ in., and will extend the road about two miles into the town of Elkader.

Jeannerette & Cypremort.—This company has been incorporated to build a railroad from Jeannerette La., on Bayou Teche, and Morgan's Louisiana & Texas road, southward about 15 miles towards Cote Blanche Bay, through a well-settled co "y, chiefly occupied by sugar plantations.

Keokuk & amilton Bridge.—One span of this bridge over the af sissippi was knocked down on the evening of Nov. 4 by a collision with the steamer "War Eagle," which was carried against the bridge by the current. The steamer was a complete wreck. The loss to the bridge is estimated at \$15,000.

Louisville & Nashville.—It is announced that the gap of 30 miles between Repton, Ala., and Pine Apple on the Pensacola & Selma Division, will be closed early next year. Work on the grading will soon be begun. This will complete the connection between Pensacola and the rest of the Louisville & Nashville system.

Louisville, New Albany & Chicago.—On this company's Chicago & Indianapolis Air Line grading is now completed from Delphi, Ind., southeast to Sheridan, about 40 miles, leaving orly 25 miles to reach Indianapolis. The right of way is cleared from Sheridan to Broad Ripple. Two gangs of tracklayers have begun work at Frankfort, going in both directions from that place.

manhattan.—At the annual meeting in New York, Nov. 9, a resolution was adopted approving the agreement with the New York and the Metropolitan Elevated companies The following resolution was also apopted:

"That while the stockholders of this company regard with satisfaction the settlement thus made with the New York and Metropolitan companies, they recommend that measures be taken to merge into the stock of this company the stock of the said two other companies; that is to say, that a surrender or transfer of the capital stock of the New York and Metropolitan companies be made by their stockholders to this company, and accepted by it; and for that purpose, that they approve and authorize the issue of the like additional amount of the stock of this company, not exceeding in the aggregate the stock of the New York and Metropolitan companies; that is to say, \$13,000,000 on such terms and conditions as may be agreed upon between the said three companies."

Massachusetts Central.—It is proposed to build a branch from this road in Wayland, Mass., to Saxonville, a distance of three miles. The mill-owners at Saxonville have offered to contribute towards its cost.

Memphis, Selma & Brunswick.—Surveys have been impleted from Memphis, Tenn., to Holly Springs, Miss. It said that work will soon be begun.

Minneapolis & St. Louis.—On the extension of this road from Ft. Dodge, Ia., southward, track is now laid to the Chicago & Northwestern crossing at Ogden, 37 miles from Ft. Dodge and 29 miles beyond last winter's terminus. It is expected that the road will reach Coaltown, 13 miles further, in another month. The intention is to build to Greenfield on the Chicago, Burlington & Quincy, 90 miles from Ft. Dodge.

On the Pacific Division grading is about finished to Winthrop, 35 miles beyond the present terminus at Arlington. Winthrop will probably be the winter terminus, leaving 25 miles to build in the spring to reach Redwood Falls. It is said that the company is considering the question of building a line of its own from Taylor's Falls to Superior or Duluth. The distance is about 90 miles.

Mississippi Valley.—This company has been organicoluild a railroad from Baton Rouge, La., up the west of the Mississippi to Arkansas City, Ark., about 250 mile

Modesto, Tuolumne & Mono.—This company has been organized to build a railroad from Modesto, Cal., on the Central Pacific's Visalia Division, through Stanislaus, Tuolumne and Mono counties to Bodie, about 150 miles. It is to be a branch of the Central Pacific, and all the corporators are connected with that company.

Montpelier & White River.—The extension of this road from Barre Junction to Montpelier, Vt., is completed, and trains have begun to use it. The extension is two miles long, and is parallel to the Montpelier & Wells River track, which this road has heretofore used.

There is some talk of an extension of the road from its present terminus at Barre south through the valley to Royalton, about 25 miles. It would make a second or loop line for the Central Vermont, somewhat shorter than the present line from Montpelier to Royalton.

Morgan's Louisiana & Texas.—Track on the North Branch of this road is now laid to Cheneyville, La., 60 miles north from the main line at Vermillionville and 204 miles from New Orleans. At Cheneyville the road connects with the New Orleans Pacific.

Nachitoches Branch.—This company has been organ-ized to build a railroad from the old town of Nachitoches, La., to New Orleans Pacific at Prudhomme station. It will be 12½ miles long.

Natchez, Red River & Texas.—This company has secured subscriptions enough to build its road from Vidalia, La., on the Mississippi opposite Natchez, westward to Trinity, about 25 miles. This will include the line of the old Vidalia & Western road, now in operation from Vidalia west 10 miles.

New Orleans & Northwestern.—Proposals for the grading and trestling of this road from Meridian, Miss., to Black Creek, 95 miles, will be received at the office of John Scott, General Manager, No. 134 Vine street, Cincinnati, O., until noon of Nov. 21; bids for the ties will also be received at the same time Plaus, specifications and other information can be obtained on application to G. Bouscaren, Consulting Engineer, No. 134 Vine street, Cincinnati.

tion can be obtained on application to G. Bouscaren, Consulting Engineer, No. 134 Vine street, Cincinnati.

New York Central & Hudson River.—This company has sold to the New York, West Shore & Buffalo Company its Athens Branch, extending from a junction with the main line near Schenectady southeastward 40½ miles to the Hudson River at Athens, together with a mile of river front at Athens, together with a mile of river front at Athens A very large share of the through freight of the New York Central was formerly taken down this branch to Athens, and thence by barges to New York—chiefly flour and grain, which at that time were nearly all delivered at points in New York harbor, distant from the terminus of the road, and so had to be lightered after unloading. Then the lightering was done from Athens instead of the New York City railroad wharf. A large part of this work has been done away by the establishment of grain elevators at the New York terminus, and for some years there has been no through traffic over the Athens Branch, and very little traffic of any description, a train being run occasionally to preserve the charter rights and carry a little local freight, chiefly hay. The price paid is reported to be \$375,000 for the road and \$25,000 for the Athens farm. This price for the road is only \$9,300 per mile. This is a very low price, but there is probably not much of it but the road bed of value for a through line, and the country is not very difficult.

It is probably a good bargain for both companies, as it was almost entirely worthless to the Central, while the West Shore would have had to duplicate it for its main line. The latter will make it a double track road and connect it with Albany by a branch about eight miles long.

New York & New England.—This company receives at the Treasurer's office in Boxton until Nov. 12 sealed pro-

New York & New England.—This company receives at the Treasurer's office in Boston until Nov. 12, sealed pro-posals for all or any part of \$1,000,000 of its new 6 per cent. first-mortgage bonds.

New York, New Haven & Hartford.—This comp has bought a tract of 34 acres at Leggett's Point on L Island Sound, and will probably build new wharves the for the transfer of freight.

New York, West Shore & Buffalo.-It is announced that the negotiations which have been pending for some time have ended in the purchase by this company of the Athens Branch of the New York Central & Hudson River road, upon terms not made public. This branch is about 40 miles long, from Schenectady, N. Y., to Athens on the Hudson, where there are docks and a large tract of land facing on the virus.

Ohio.—In the contempt cases in the Court of Common Pleas at Columbus, O., the defendants have filed answers seeking to clear themselves from the charges of contempt. No further progress has been made in the main litigation as to the lawfulness of the consolidation.

Old Colony.—This company has completed a branch about 1½ miles long from the track of the leased Boston. Clinton, Fitchburg & New Bedford road in Taunton, Mass., to the Whittenton Mills; it is used for freight only. It is proposed to extend this spur about 3½ miles further to the track of the main line in Raynham.

track of the main line in Raynham.

Oregon Pacific.—The Portland Oregonian says of this company, which is building a road from Yaquina Bay, Or., eastward: "The company has now in its employ 900 men, and to this number 300 more will be added next week. They have four saw mills in operation, and another will be completed next week. These figures do not include the men employed on the tunnels, bridge and trestle work, as these are separate contracts outside of the company's pay-roll. The company's work at Yaquina is progressing finely, and the tramway now reaches deep water. The sand is banking up on each side, being now some 9 ft. deep, which adds considerable to the progress of the work."

Pensacola & Atlantic.—A contract has lately been let to Futnam & Tobias, of East Pascagoula, Fla., for the pile bridge over Escambia Bay, 2½ miles long, with an iron draw. Contracts are now out for all the grading and all the bridges, and work is progressing steadily. The company has contracted for 8,000 tons of rails, and the first lot is now on the way. It is expected that tracklaying will be begun at several points early next year, and that the entire line from Pensacola to Chattahoochie will be finished by the end of 1882.

Pittsburgh, Bradford & Buffalo.—The Northern Branch of this road has been completed from Tylersburg in Clarion County, Pa., nine miles from the old terminus at Artbur's and 16 miles from Shippenville on the main line.

Providence & Worcester.—On Monday, Nov. 7, the second track on this road was opened from Farnums, Mass., to Northbridge Pond, one mile north of Northbridge station, and from Millville to Uxbridge, Mass.; total distance, six miles.

miles.

Quebec, Montreal, Ottawa & Occidental.—The Toronto (Ont.) Monetary Times says: "Various rumors have been rife of late with regard to the sale of the Quebec, Montreal & Occidental Railway, by the Quebec provincial government. The latest story, based it is said on good authority, i, that a good offer has been made by the new French Credit Mobilier, the President of which company is now on his way out. Another to the effect that the Dominion government has been using its influence with the Pacific Railroad Syndicate to induce the latter to buy the road and make it their Eastern outlet. In this connection it may not be amiss to mote that the traffic receipts of the road continue to increase, the receipts for the three months ending Oct. 1 exceeding those of the corresponding period last year by some \$90,000.'

Richmond & Danville.—The Richmond (Va.) State of

Richmond & Danville.—The Richmond (Va.) State of Nov. 5 says: "Ever since the Richmond & Danville pool committee met in this city (Oct. 24) and broke the pool agreement rumors of various kinds have been afloat. It was thought by some that the pool was broken up for the purpose of allowing large holders of Richmond & Danville stock to unload. Others gave it as their cpinion that Mr. Perk'ns, First Vice-President of the road, who owns about 10,000 shares of the stock, was at the head of the new syndicate in New York, which had been formed for the purpose of buying a controlling interest in the Richmond & Danville line. A telegram was received from New York to-day by one of the Richmond directors of the road denying that there was any truth in the rumors. * * * A Richmond & Danville director informed the writer to-day that he did not believe director informed the writer to-day that he did not believe the large transactions in Richmond & Danville stocks and securities had any railroad significance whatever; that the movement was only speculative."

Rome, Watertown & Ogdensburg.—The Commercial and Financial Chronicle of Nov. 5 says: "The Reorganization Committee, consisting of Messrs. Samuel Sloan, G. D. Morgan, Percy R. Pyne, Charles Morgan, and Charles Morgan, Jr., met in this city on Thursday and adopted the following plan:

"1. Give in exchange for outstanding first-mortgage consolidated bonds new bonds bearing 5 per cent. for three years from Oct. 1 and 6 thereafter. 2. Fund all accrued interest, amounting to 28 per cent. into 7 per cent. income bonds. 3. Assess stock 10 per cent. for the purpose of paying off the floating debt, the purchase of new equipment, etc., and give income bonds for amount of assessments.

"In order to carry out the plan and insure the payment of the assessment on the stock, Charles Parsons has presented to the Farmers' Loan & Trust Company—trustee of the mortgage—\$530,000 of the first consolidated bonds (being more than one-tenth of the outstanding bonds) and requested it to advertise and sell the road in the manner provided for in said mortgage."

Saratoga & Mt. McGregor.—This company has been

Saratoga & Mt. McGregor.—This company has been organized to build a railroad from Saratoga, N. Y., to Mt. McGregor, about 10 miles. The capital stock is \$300,000.

Savannah Valley.—A preliminary survey has been completed for this road from the Augusta & Knoxville at Dorn's Mine, S. C., to Edgefield.

completed for this road from the Augusta & Knoxville at Dorn's Mine, S. C., to Edgefield.

Southern Pacific.—A dispatch from Yuma, Arizona, Nov. 4. says: "In the injunction suit of the Southern Pacific Company of Arizona against the Texas & Pacific Company, the latter has filed in the office of the Clerk of the District Court here a notice of a motion to diss lve the injunction, a demurrer, and an answer. The answer denies that the plaintiff is or ever was owner or entitled to the possession of the real property claimed by the plaintiff. It asserts that the plaintiff, or the Central Pacific Company, is in wrongful possession of lands traversed by the plaintiff's road. It denies that it ever was the intention of the defendant to institute more than one suit; that the defendant is insolvent; that the defendant ever abandoned or ceased working the road; that the Southern Pacific Railroad Company will in one year have a continuous line of transcontinental railway extending from San Francisco to Galveston, or that the lands in Arizona over which the Southern Pacific passes are public lands. It asserts that the routes of the Southern Pacific and the Texas Pacific are identical, and that by the doctrine of accession the road became the property of the defendants; and as a counter-claim the answer sets out the object of the incorporation of the Texas & Pacific Company, its privileges under the franchise granted by Congress, and all the facts at length going to show that the said company has performed all the necessary acts required by the terms of its charter."

Utah & Northern.—Track on this road is now laid to Silver Bow Junction, Montana, 31 miles northward from the late terminus at Melrose and 409 miles from the southern terminus at Ogden, Utah. Grading is nearly finished on a branch seven miles long from Silver Bow to Butte, on which track is to be laid at once. The main line will run from Silver Bow to Helena.

Silver Bow to Helena.

Vicksburg, Shreveport & Pacific.—Sealed proposals will be received at the office of John Scott, General Manager, No. 134 Vine street, Cincinnati, O., until noon of Nov. 21, for the grading and trestling of an extension of the road from Monroe, La., to Arcadia, 48 miles; also for the ties for the road. Plans, specifications, etc., can be seen on application to 6. Bouscaren, Consulting Engineer, No. 134 Vine street, Cincinnati, or to F. Y. Dabney, Chief Engineer and Superintendent, Monroe, La.

Wabash, St. Louis & Pacific.—Chicago papers report that this company has about completed arrangements for running through trains between Chicago and Detroit, using its own Detroit Division from Detroit to Auburn, and the Baltimore & Ohio thence to Chicago. This line is about the same length as the Michigan Central.

Agents of this company have been securing the right of way for the extension of the Quincy, Missouri & Pacific Division from Trenton, Mo., to a junction with the company's Omaha line. It is said that the company has decided to extend this division to St. Joseph next year.

West & East.—About half the grading is now completed on this road, which is to run from Durant, Miss., on the Chicago, St. Louis & New Orleans road, west by north to Lexington, a distance of 12½ miles.

Western North Carolina.—Proposals will be received at the office of this company in Salisbury, N. C., until Nov. 16, for the grading and masonry on a part of the Ducktown Branch west of Pigeon River. Plans and specifications can be seen at the office of Chief Engineer J. W. Wilson in Ashe ville, N. C.

West Virginia Central & Pittsburgh.—This road was formally opened last week by an excursion over the line; some inspection of the proposed extension was also made. The completed line runs from the Baltimore & Ohio at Bloomington up the North Branch of the Potoma: to Elk Garden, 12 miles. At Elk Garden there are extensive coal mines, which are now being worked.

mines, which are now being worked.

Wilmington & Northern.—Work is progressing well on the extension of this road from Wilmington, Del., to the Delaware River, about 3½ miles. Work has been begun on the drawbridge over the Christiana.

Wisconsin Central.—Several of the passenger conductors on this road have been discharged and two have been arrested. It is charged that they defrauded the company by retaining cash fares and by taking up tickets without canceling them. Some of these tickets were sold to scalpers and others turned over to station agents in collusion with the conductors and resold by tenm. It is said that evidence has been discovered which indicates that these frauds have been going on for several years.

ANNUAL REPORTS.

The following is an index to the reports of companies which have been reviewed in previous numbers of this volume of the Railroad Gazette:

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Of the passenger miles 25.1 per cent, and of the ton reviewed in previous numbers of this volume of the Railroad Gazette:

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Old Colony.

This company's lines cover the whole of southeastern Massachusetts, and extend to the west and north of Boston as far as Fitchburg and Lowell, the company now operating a

greater mileage than any other company in Massachu They are as follows:	setts.
Boston to Newport, R. I. South Braintree to Plymouth. Braintree by Chosset to Kingston Cape Cod Line, Middleboro to Provincetown.	37.60 25.94 32,36
Total, counted as main line owned	
Total owned	303.84

leased:
Fitchburg to New Bedford.
South Framingham to Lowell
Fairhaven to Tremont.
Seven short branches and connections.

switching engines, 110 in all; 213 passenger and 54 baggage cars; 826 box, 40 stock, 653 flat, 72 six-wheeled stone and 6 caboose cars; 1,000 coal and gravel cars.

The general balance sheet is as follows:

1 1	73 1		\$1,000,000.00
	Bonds.		5,324,000.00
			208.(57.95
1	Accounts and balances		533,410.59
1	Improvement account		159.867.44
	Complete	**********	100,007.11
- 1	Surplus		759,262.98
1	m-4-1		
٦.	Total		14,518,398,96
	Total	985,657.70	,
1	Old Colony Stearaboat Co	725,500.00	
	Nantucket & Cape Cod Steamboat	1201000.00	
1	Co.	17 040 00	
	Co	15,340.83	
	Other railroad property	488,225.00	
1	Real estate	286,987.53	
	Materials	387,260.95	
П	Cash and receivables		
-13	Cash and receivables	542,028.11	*
. II	Debit balances	87,398.84	
ų.		9	14,518,398,96
9 1	Stock was increased \$400,000 and		

Train miles : Passenger Freight Service, etc	1880-81. 1,458,961 817,332 378,547	1879-80. 1,357,725 790,641 318,192	In I. I. I.	c. or Dec. 101,236 26,691 60,355	P.c. 7.4 3.3 19.0
Total	2,654,840	2,466,558	L	188,282	1.5
	5,924,030	5,526,279	I.	397,751	7.2
Passenger miles8		89,502,519	D.	314,936	0.4
Tons freight carried	1,441,618	1,371,449	I.	70,169	5.2
Ton miles	3,794,401	51,169,628	I.	2,634,773	5.1
Passengers, No	61.13	65.92	D.	4.79	7.3
Freight, tons	65.82	64.72	I.	1.10	1.7

1880-81.	1879-80.	I	ac. or Dec.	P.c.
		7.	\$126,687.35	7.4
		I.		7.7
	143,157.16	D.	4,190.89	2.0
84,160.76	84,842.47	D.	681.71	0.8
\$3,746,448.06	\$3.518.769.56	T	9997 878 50	6.5
2,499,501.51		Î.	182,478.99	7.8
\$1,246,846.55	\$1,201,647.04	I.	\$45,199.51	3.7
8,228.53	7,765.13	I.	463.40	6.0
2,738.52	2,646.80	I.	91.72	3.4
66.72	65.85	I.	0.87	
	\$1,913,925,90 1,609,395,13 138,966,27 84,160,76 \$3,746,448,06 2,499,301,51 \$1,246,846,55 8,228,53 2,738,52	\$1,913,925,90 1,609,395,13 1,489,531,38 138,966,27 143,157,16 84,100.76 84,842,47 83,746,448,06 2,409,301,51 81,246,846,55 81,201,647,04 8,228,53 7,765,13 2,738,52 2,646,80	\$1,913,925,90 \$1,797,238,55 \$1,696,395,13 \$1,493,531,38 \$1,138,966,27 \$143,157,16 \$D, \$4,160,76 \$84,842,47 \$D, \$3,746,448,06 \$3,518,769,56 \$1,246,940,151 \$2,317,122,52 \$1,\$41,246,846,55 \$1,201,647,04 \$1,\$8,228,53 \$7,765,13 \$1,\$2,738,52 \$2,646,80 \$1.\$	\$1,13,925.90 1,699,395.13 1,499,351.38 1,493,571.60 84,160.76 84,160.76 84,842.47 D. 681.71 \$3,746,448.00 2,499,301.51 \$1,246,846.55 \$1,201,647.04 I. \$45,196.51 8,228.53 7,765.13 I. 463.40 2,738.52 2,846.80 I. 91.72

and \$92,719.95 the previous year. The earnings show a

\$1,2 33 58	246,846,55
75 23 72 00 00	237,012.70
	\$9,833.85 754,619.04
. \$7 05 86	764,452.89
	F 400 04

Surplus, Sept. 30, 1881... \$759,262.98 During the year 3,653 tons steel rails and 181,296 new ties were laid. There are now 186 miles of the main line and 73 miles of the leased line laid with steel. Several new stations were built and eight new bridges, five of them of iron.

iron.

Extensive changes and additions were made to the yard and station at South Abington. Second track was completed from Somerset Junction to the tunnel at Fall River, 4.23 miles; this year the tunnel will be enlarged for second track.

track.
A branch 1½ miles long was built from Taunton to the Whittenton Mills; it is proposed to extend it to Raynham. The Fulton Foundry property has been bought, besides some other land in Boston. More is needed to change the grade and nake a new crossing in South Boston.
There were two engines and 95 freight cars added to the equipment; 3 engines, 6 passenger and 52 freight cars were built to replace old ones condemned.
The improvement account was as follows:

Balance, Oct. 1, 1880....
Premium on stock sold.
Charged from earnings....

Total \$278,857.25 outh Abington improvement \$25,874.99 econd track. \$93,114.82 118,989.81

to make this boat superior to any ever run upon Long Island Sound.

54.38

During the year past, four thousand shares of new stock have been sold. On these shares a premium above the par value of \$118,857.25 has been realized. While in the form of returns adopted by the railroad commissioners the premium on shares or bonds sold is returned as income, it can in one sense be regarded as income to be divided, and this amount has been credited to the improvement account. This account is annexed to the report. Bonds of the company track from the stockholders to issue notes or bonds having more with the same and no new bonds have been issued.

To carry on the business of the company in the next year it may be desirable to issue notes or bonds having more with the same of the company in the next year it may be desirable to issue notes or bonds to the amount of not exceeding \$500,000. ** ** * *

The business of the year past, four thousand shares of new stock have been salicated. While in the form of returns adopted by the railroad commissioners the premium on sense be regarded as income, it can amount the same to the improvement account. This account is annexed to the improvement account. This account is annexed to the report. Bonds of the company was a controlling intermipany, whose lines run we year it may be desirable to issue notes or bonds to the amount of not exceeding \$500,000. ** * * * *

The business of the year past, four thousand shares of new stock have been issued.

This account is annexed to the improvement account. The control of the company in the next year it may be desirable to issue notes or bonds to the amount of not exceeding \$500,000. * * * * *

The business of the year past, four thousand shares of the part walter of \$118,857.25 has been realized. While in the form of returns adopted by the

LOCOMOTIVE RETURNS, JUNE, 1881,

es of all American railroads are invited to send us their monthly returns for this table.

	Miles	Loc	MILEA	GE.	MILE	s Run	To	AVER	IN.	CENT	IN FER	Co	ST PER	MILE	IN CE	NTS FO	R	AVER COST	
NAME OF ROAD.	es operated	Locomotives in service	Total	Average per engine.	Ton of coal	Cord of wood	Pint of oil	Passenger cars	Loaded freight cars	Passenger car mile	Freight car mile	Repairs	Fuel	Stores	Miscellaneous	Engineers, firemen	Total	Coal, per ton	Wood, per cord
Illegheny Valley, River Div* Low Grade Div* Low Grade Div* Rorthern & San Pablo Div. Northern & San Pablo Div. Visalia Div. Tulare Div. Los Angeles, Ban Diego, Yuma & Wilm. Divs. California Pacific Div. California Pacific Div. California Pacific Div.	199 120 900 104 157 170	37 22 27 30 17 12	89,523 41,474 82,415 80,603 97,305 30,833	2,419 1,885 3,052 2,687 2,194 2,509	39,30 30,60 47,90 35,48 39,28 53,55		21.76 16.60 19.37 21.03 21.05 19.37	******	******	4.821	0.961	7.89 3.49 3.27 10.33 3.07 3.48	3.53 3.73 13.22 18.38 20.24 19.36	0.50 0.67 0.46 0.46 0.41 0.48	0.92 0.32 0.08 0.61	6.69 7.20 7.62 7.00	33.03	6.50 6.50 10.50	4.75 4.75 4.75
Angeles, Sant Dieso, Yuma & Wilm, Divs.+ Glia & Tucson Divs.+ California Pechnopolisi Sacramento Div.+. Truckee Div.+. Truckee Div.+. Humboldt Div.+. Sait Lake Div.+. Bait Lake Div.+. Terre Haute Div.+. Cleveland & Pittaburnh* Cleveland & Pittaburnh* Dela., Lacka. & Western,	151	34 42 11 4 44 7 29 21 29 52 89 26	100,077 118,589 28,033 28,034 101,736 23,054 76,181 101,928 116,782 90,223 211,518 70,125	2,943 2,823 2,544 1,402 2,312 3,293 2,627 3,444 3,515	33.05 39.89	73.31 25.82 37.30 89.52	19.87 22.56 18.65 20.19 16.36 15.00 18.00 17.84	4,10	******			2.48 2.01 7.11 20.43 2.49 8.48 2.18 4.06 3.14 2.20 2.00 4.07 4.79	21.15 19.25 16.65 6.48 18.39 12.73 18.48 16.34 21.74 4.80 4.20 3.13 2.16	0.58 0.57 0.43 0.39 0.45 0.42 0.47 0.44 0.52 0.40 0.30 0.53 0.61	0.32 0.79 0.34 0.29 0.05 9.34 0.27 0.17	7.00 6.08 9.7 5.89 8.46 7.71 7.25 5.70 4.61 6.43	29.51	10.50 6.50 6.50 6.50 6.50	4.78 4.78 4.78 4.78 4.78 4.78 4.78 4.78
bela, Lacka, & Western, Hoomaburg Div. 1 Erle & Pittsburgh Div. 1 Erle & Pittsburgh Div. 1 Frand Rapids & Indiana. Frand Rapids Div. 1 Forth Di	98 332 247 365 101 345	26 28 42 17 102 19 58 13 43 42 38	70,896 79,9 6 190,958 47,00 1 260,197 16,894 141,616 26,187 112,656 115,814 125,614	2,765 2,551 889 2,440 2,014 2,606 2,757	89.74 42.69 50.50 34.59 39.02 8 '.60 85.87 81.08 40.54 45.60	35.21	27.67 17.41 17.96 25.85 14.21 17.60 13.58 17.69 16.34 14.93 21.20	471 1.67 4.00 1.88 4.25 3.39	21.10 19 66 15.35 13.52 14.91	3.450		2.44 4.35 3.60 3.18 4.15 2.84 6.43 2.18 5.40 4.32 3.20	4.65 7.65 7.41 4.85 4.28 5.44 4.12 7.51 6.83 5.10	0.35 0.33 0.30 0.33	1.52 3.63 0.08	5.71 4.94 5.96 4.96 5.57 5.55 5.89 5.87	7.76 17.69 21.06 16.07 15.25 12.30 17.78 12.18 19.10 19.82 14.50	3.50 2.45 1.60 1.60 1.60 1.40	4.10 3.23 3.2 3.2 3.0
Lake Shore & Mich. So, Buffalo Div.4. Erle Div.4. Erle Div.4. Erle Div.4. Toledo Div.4. Mich. Southern Div.4. Little R'k. Mies. Riv & Texas. Louisv'e & Nashv'e, First Div* Second Div.* Nash. & Decatur Div.* Nash. & Decatur Div.* Nash. & Decatur Div.* South & North Ala* Mobile & Montgomery* Ev. Hen. & Nash. Div.* Ev. Hen. & Nash. Div.* New Orleans Div.* Pensacola & Selma Divs.* Asrquette, Rouch. & Out. N. V. Ps. & O., Eastern Div. No. Cent. El. & Can. Divs. Doio Central. Pennsylvania, New York Div.† Amboy Div.† Belvidere Div.† Hiddle Div.† Fittsburgh Div.† Hiddle Div.† Fittsburgh Div.† Attoona Div.† Lawistown Div.†	155 470 200 13) 122 189 189 207 135 141 184 83 225 197 141 147 213		188,789 270,5911 175,892 5 4,679 28,570 162,049 70,839 44,10 64,553 103,134 65,545 75,713 88,272 62,362 94,466 173,797 154,798 12,60 119,130 304,442 109,927 68,556 485,743 109,927 68,556	2,330 2,141 2,745 2,532 2,532 2,284 2,576 2,077 2,452 2,452 2,452 2,452 2,818 2,818	39 41 36.99 27.55 39.36 39.36 41.21 40.54 30.42 27.67 31.88 45.69 28.3 40.22 27.55 36.40 3:53 49.21 36.83 49.21 36.83 26.45 23.53	65.03	24.41 26.47 15.65 21.09 9.00 16.09 18.42 11.94 14.49 14.63 12.15 13.13 14.94 15.39 24.3 17.63 21.8 15.61 15.61 15.61	4.85 4.10 4.24 3.9) 3.82 3.86 3.13 5.37 5.80 6.90 3.70	17,81 13,68 12,95 15,62 13,70 16,30 12,23 13,59 19,40 8,69 49,36 22,3 13,00 24,8	3. 90 2.790 2.620 3.510 4.100 2.290 5.130 4.980	1.2 0 1.230 1.570 1.070 1.630 1.540	4.67 3.93 3.931 2.4.54 4.54 4.54 4.52 5.52 5.52 5.52 5.	6.80 9.04 7.86 6.38 6.76 5.26 5.11 4.56 8.55 2.46 7.24 4.88 5.70 1.29 7.24 4.88 3.23 8.50 6.50 8.80 6.50 8.80 8.30 8.50 8.50 8.50 8.50 8.50 8.50 8.50 8.5	0.41 0.40 0.51 0.42 0.60 0.81		6.0 6.3 6.56 6.56 6.63 6.63 6.30 5.96 6.30 6.31 6.10 6.31 6.50 6.31 6.50 6.31 6.50 6.31	18.08 18.37 20.33 17.28 15.42 18.15 18.15 16.54 15.05 12.04 14.51 18.16 24.05 15.39 17.52 14.14 20.85 11.40 14.20 14.20 14.30	3.10 1.89 1.76 2.04 1.32 3.26 1.52 1.32 4.7 3.26 4.2 5.1.9 1.97 1.6 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	1.66 2.22 2.22 2.5 2.5 2.5 1.5 1.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7
Tyrone Div.++ West Penn. Div.++ Altoona Div.++ Lewistown Div.++ Bedford Div.++ Frederick Div.++ Pitts. Va.& Ch. Div.++ Ditts. Va. Wayne & Chicago	127 104 63 57 109 60	40 22 25 9 5 9 14	91,875 47,829 51,878 17,453 14,368 21,673 28,031	2 298 2,174 2,075 1 939 2,874 2,408 2,002	20,79 36,18 43,11 28,05 28,80		19.23 24.63 19.84 16.84	******		******		10.60 2.20 4 90 4.10 15.00 0.50 1.20	5.81 3.40 2.91 4.31 4.21 5.70 2.70	0,60 0,50 0,40 0,60 0,60			17.00 5 90 8.40 8.90 19.60 6.8 4.50	1.20 1.20 1.20 2.14 1.20	2.7 2.7 2.8 3.8 2.7
Lewistown Div.++ Bedford Div.++ Frederick Div.++ Frederick Div.+- Prederick Div.+- Pitts. Va. & Ch. Div.+- Pitts. Va. & Ch. Div.+- Pitts. Va. & Ch. Div Western Div Western Div Western Div P. C. & St. L. Div P. C. & St. L. Div Valued, D. Piphos & Burlingtonti. Valued, D. Piphos & Burlingtonti. Peorla & I. Wabsh, St. L. & Pacific. Peorla & I. Lowa Div.	383 280 197 247 370	149 116 39 93 31	419,758 393,721 109,242 230,675 82,310	3,018 3,437 2,801 2,924 2,655	39.6 46.57 29.53		17.86 17.20 11.87 16.83 21.10	7.00 4.79 5.62	18.05	2,889	0.965 1.134 1.125 0.820	2.90 5.05 4.93 7.34 1.08	4.73 3.97 5.39 3.36 1.85	0.65 0.32 0.62 0.45 0.31	1.97 2.01 2.87 3.24	5,92	16.63 17.53 19.73 21.19 7.02	2.88	
Vest Jersey+	421 163	58	165,410 61,872	2.852			15 05					3 65	4,81 10.70	0.39		6.46	15.31	1,50 4.00	

*Five empty cars rated as three loaded ones.

*Switching engines allowed 6 miles per hour; helping engines, unidistance run.

*Switching engines allowed 6 miles per hour.

*Switching engines allowed 6 miles per hour.

*Engineers', firemen's and wipers' wages not included in cost.

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*Engineers', firemen's and wipers' w

expenditures upon lands and equipment to enable its transaction with economy to the company and satisfaction to the public. The growth in business is still going on. It has been greater in the past three months than in any part of the year, and the directors have felt obliged to devote a considerable part of the income to provide for the future wants of the company. The expenditure upon road-bed, rails, equipment and stations has been greater than the average amount necessary to keep them in good condition. When the business becomes stationary, and there is less pressing demand for increased accommodations, the expenses can be greatly diminished; but in the present condition of the business the directors have considered it the better policy to meet this demand out of the income, so far as possible, instead of increasing the capital invested. For this reason they have transferred \$90,000 of income to the improvement account, to be applied to improvements of the road and equipment which are necessary to meet immediate demands."

Cincinnati, Indianapolis, St. Louis & Chicago.

This company owns a line from Cincinnati by Indianapolis to LaFayette, Ind., 175 miles, and the Lawrenceburg Branch, 2 miles; it leases the Cincinnati, LaFayette & Chicago, from LaFayette to Kankakee, Ill., 75 miles; the Fairland, Franklin & Martinsville road, 38 miles, and the Harrison Branch, 7 miles, making 177 miles owned and 297 worked. The report is for the year ending June 30, 1881.

1881.

The Cincinnati, LaFayette & Chicago includes 19 miles of the Lake Erie & Western, from LaFayette to Templeton, the use of which is leased.

The company is successor through foreclosure to the Indianapolis, Cincinnati & LaFayette.

The general account is as follows:

Stock	\$4,000,000
Bonds	7,499,800
Bills payable	1 302 104
Accounts and balances	371,230
Profit and loss, June 30, 1880 \$67,261	0121100
Surplus for 1880-81	
200,000	275,947
Total	219 539 171
Road and equipment\$12,337,951	\$10,000,III

295,262 245,405 595,967 13.539.171 Since the close of the year stock has been increased to \$6,000,000. The floating debt has been reduced.

The bonds outstanding are \$1,600,000 first-mortgage bonds of 1858; \$499,000 Cincinnati & Indiana bonds of 1862; \$1.432,000 Cincinnati & Indiana bonds of 1867; \$48,800 funded coupons; \$2,790,000 Indianapolis, Cincinnati & LaFayette bonds of 1867; \$68,000 equipment

bonds; \$1,076,000 Cincinnati, Indianapolis, St. Louis & Chicago consolidated bonds. The last named issue was increased by \$287,000; the other issues reduced by \$288,100, a net decrease of \$1,100.

The traffic for the year was as follows:

Passengers car. 1880-81. 1879-80. Inc. or Dec. P.c. ried. 1880-81. 2799,465 I. 19,867 2.7

Average rate: Per pass, per mile. 2.52 cts. 2.63 cts. D. 0.11 ct. 4.2 Per ton per mile. 1.21 " 1.34 " D. 0.13 " 9.7

The average receipts show the reduction consequent to the wrates prevailing in the later months of the year.

	1879-80, \$1,052,181 564.551 144,510	Increase, \$457,261 124,918 21,637	P. c. 43.5 22.1 14.9
\$2,365,058 1,403,568	\$1,761,242 1,178,129	\$603,816 225,439	34 3
\$961,490	\$583,113	\$378,387	64.1
8,298	7,934	364	4.5
3,374	2,627	747	28.4
	\$1,509,442 689,469 166,147 \$2,365,058 1,403,568 \$961,490 8,298	\$1,509,442 689,469 106,147 12,365,058 1,761,242 1,178,129 \$961,490 \$383,113 \$2,98 7,934 3,374 2,627	\$1,509,442 689,460 689,460 166,147 124,510 124,918

Expenses include taxes, which were \$37,925 last year. The statements include the Cincinnati, LaFayette & Chicago for ten months ouly last year. The increase in earnings was in face of a reduction in rates.

The result of the year was as follows:

 Net earnings, as above.
 \$941,490

 Interest and rentals.
 572,804

chase of 850 freight cars, at a cost of nearly \$450,000, and 18 locomotives, at a cost of \$110,000.

"This company also agreed, as part of the consideration for the lease, to carry the floating debt of the Cincinnati, La Fayette & Chicago Railroad Company, amounting to \$139,-000. It also advanced a large sum to aid in the construction of the Vernon, Greensburg and Rushville Railroad, It also agreed to advance one-half, or \$300,000, toward building a connection from Kankakee, on the Cincinnati, La-Fayette & Chicago road, to Seneca on the Rock Island Railroad.

"In order to provide funds for all the above, \$2,000,000 of new stock was issued by authority of the stockholders and sold to the stockholders of record of June 30, 1881, at 70 cents on the dollar. This gave \$1,400,000, a sum which, with the net earnings, was sufficient to pay all the above obligations and extinguish the floating debt. The condition of the property has been fully kept up to its standard of excellence during the year. * * *

"On July 1 the directors of the company made a contract with the directors of the Vernon, Greensburg & Rushville Railroad to operate the latter road for five years and pay interest upon its bonds, taxes and operating expenses, and carry, without interest, the debt due this company for material furnished in the construction of the road.

"The annual interest is 7 per cent. upon \$450,000—not an excessive rental for 45 miles of road, and a very good contract for this company, considering the business we are thereby enabled to control for our main line. * * *

"It will be seen that the net earnings for the year were nearly \$1,000,000—as um sufficient to pay interest on bonded debt, rentals and taxes, and 6 per cent. dividend upon the present stock of \$6,000,000. In addition to this we shall have the increase that will come from the additional equipment we have purchased, and the 87 miles of new railroad we are building.

"Since the close of the year, all through rates for freight and passengers have become demoralized, and

Minneapolis & St. Louis.

This company owns a line from Minneapolis, Minn., to Ft. Dodge, Ia., 210 miles, with a branch from Minneapolis to White Bear, 15 miles. It owns one-half share in a line from Wyoming, Minn., to Taylor's Falls, 21 miles, and leases the right to run over the St. Paul & Duluth road from White Bear to Duluth, 142 miles. Other extensions are in progress, as noted below. The report is for the year ending Dec. 31. The equipment consists of 31 engines; 8 passenger, 4 baggage and smoking and 2 mail and express cars; 556 box, 54 stock, 165 flat and 22 caboose cars.

The general account is as follows:

ı	The general account is as follows:	
	Stock	\$2,000,000.00
	Bonds	2,594,150.00
	Equipment notes	507.645.22
l	Bills payable	641,300.69
l	Bills and accounts	193,620,07
1	Income, balance	33.765.0:
ı	Total	85 070 491 O1
	Road and equipment\$5,739,22	5.41
	Coal land and other property 112,30	
	Materials and fuel	0.02
ı	Cash and receivables 99 44	

Of the bonds \$455,000 are secured on the old line; \$950,-000 on the Albert Lea Extension; \$123,000 on Lake Superior Extension; \$1,015,000 on the Iowa Extension, and \$51,150 are income bonds. The equipment notes are payable in monthly installments.

The traffic for the year was as follows:
Train miles:

1880

1870

	Train miles: Passenger Freight	359,894	1879. 122,532 177,096	In I. I.	50,509 182,798	P. c. 41.1 103.3
	Service and switch-	275,893	157,113	I.	118,780	75.7
	Total		465,741	I,	352,087	77.0
6	Passengers carried	122,095	81,067	I.	41,028	50,6
	Passenger miles		2,701,000	I.	1.178,015	43.6
	Tons freight carried.	458,430	330,253	I.	128,177	38.8
	Ton miles	43,290,331	19,042,053	I. :	24,257,278	127,4
	Av. train load:					
	Passengers, No	22.42	22.05	T.	0.37	1.1
	Freight, tons	120.31	107.52	I.	12.79	11.8
	Av. receipt:					
	Per pass, per mile	3.21 cts.	3.17 cts.	I.	0.04 ct.	1.8
•		1.56 "	1.96 "	D.	0.40 "	20.4
	Locomotive servi	ce cost 18.9	2 cents per	mil	e. Earning	gs per

car-1,255,984 1,180,594 I. 75,480 6.4 train mile were 109.040 cents; expenses, 74.893 cents. Main-tenance of way cost 16.49 cents per train mile. The earnings for the year were as follows:

1880. Freight\$677,554.18 Passengers127,729.46 Mail and express14,275.27	1881, \$372,507.31 86,954.39 11,883.20	I. I. I.	Inc. or Dec. \$305,046.87 40,775.07 2,392.07	P. c. 81.8 46.9 20.1
Total \$819,558.91 Expenses 562,908.01	\$471,344.90 284,704.83	I.	\$348,241.01 278,203,18	73.9
Net earn\$256,650.90 Gross earn. per	\$186,640.07	I.	\$70,010.83	37.5
mile	3,832.06 1,517.40 60.42	I. D. I.	146.37 272.80 8.26	3.8 18.0

The comparison is hardly a fair one in view of the large increase in mileage of road last year. The expenses were large on account of the heavy renewals.

The result of the year was as follows:

4	Net earnings	\$256,650.90 225,967.67
	Surplus to income account	020 602 92